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System Analysis, Program Development, and Cost-Effectiveness Modeling of Indian Education for the Bureau of Indian Affairs. Volume II, Education Systems Analysis & Programs Development.

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The general objective of the analysis of the Bureau of Indian Affairs (BIA) education system is the identification and definition of the principal problems in the system, so that programs to alleviate them may be planned, developed, tested, and implemented. This volume of the analysis presents a systems analysis of Indian education in the BIA schools. Objectives, methodology, and findings are presented relative to education and the interaction of economic factors and the community with education. Following the above presentation alternative plans and programs and presented relative to the findings of the analysis. The films "Problems of American Education" and "Alternatives for American Indian Education" were developed concurrent to and in conjunction with this document and were designed to give visual and auditory support to the findings of the study. Related documents are RC 003 750, RC 003 751, and RC 003 752. (DK)

System Analysis, Program Development, And Cost-Effectiveness Modeling Of Indian Education

For the Bureau of Indian Affairs

VOLUME II

EDUCATION SYSTEMS ANALYSIS & PROGRAMS DEVELOPMENT

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Chapter I

Objectives and Methodology

Objectives of the Analysis

The general objective of the analysis of the BIA education system is the identification and definition of the principal problems in the system, so that programs to alleviate them may be planned, developed, tested, and implemented.

There is, of course, a hierarchy of problems in any complex social system. If no problems had been apparent in the Indian education system, this system analysis would probably not have been undertaken. The already perceived major problem stimulating action has been the poverty of most American Indians, and their related low level of educational achievement, have been recognized for some time as major problems requiring action. Beyond this general observation, there has been no clear and thorough study of the specific causes of poverty and low educational achievement among Indians. It has been the objective of the education system analysis to determine the causes of these significant problems.

The analysis has been limited by resource constraints to BIA schools, principally those on reservations, as the BIA can directly improve conditions only in schools under its jurisdiction. Analysis has shown, however, that non-BIA schools teaching Indian children tend to have higher academic standards than BIA schools of the same type: this suggests that improvements may be more urgently needed. In addition, all boarding schools for Indians are administered by the BIA; as they have been the subject of much adverse publicity, an immediate investigation of these schools appeared to be desirable.

The more specific objectives of the analysis have included the determination of the advantages and disadvantages of such controversial BIA programs as boarding schools, standard (non-culturally specific) education, and vocational education. These have been analyzed within the general context of determining the relationship among

education, poverty, and socio-cultural change.

An unprecedented aspect of the analysis has been the objective of determining the educational objectives not only of the policy-making and executive levels of the BIA school system, but also of the students, teachers and parents who are the other major participants in the system. This has been done in order to make objectives operational, and so that greater agreement on policy may be facilitated.

A second objective (more common, it is to be hoped, in the future) has been the identification of the economic, social, and cultural factors which appear, and are affected by educational achievement. Education has been described as perhaps the principal agent of change among the Indian people; an objective of the analysis has been to determine just how consonant these changes are, in nature and degree, with the desires of the Indian people.

The detailed objectives of the analysis have been the determination of the causes of the relatively low Indian student academic achievement and consequent low college and job placement rates; the high rate of teacher turnover; the apparently low comparative cost-effectiveness of Indian education; and the predominantly slow rate of reservation economic development insofar as this can be related to education.

Research Conducted

The research conducted in pursuit of the above objectives of the analysis began with a data gathering phase that included literature surveys; interviews with Indian scholars; field trips to reservation, schools, and BIA administrative offices; interviews, individual and group, with students, teachers, administrators, parents, and significant reservation political and industrial personages; survey of school records and data; observation of school classroom dormitories, dining rooms and other facilities; and intensive discussions of issues with BIA executives at all levels from the Commissioner down. Data gathering has taken place throughout the effort, as one cannot at any time ignore valuable information; the main effort however took place in the first five months of the contract period.

The data reduction and analysis phase extended from the third to the eighth month of the contract. Data reduction included the derivation of statistics from the many interviews, and the consolidation of subjective impressions. Data analysis included the formulation of generalizations about the data, inferences as to the reasons for various findings, interpretation of the findings, and the evaluation of their validity.

General Research Strategy

The general research strategy of the entire project has been that of the basically system analysis sequence of goals formulation; analysis processes directed toward achieving goals; identification of the problems and issues which cause discrepencies between goals and actual results; generation of alternative programs to respond to the problems identified; and cost effectiveness evaluation of these alternative programs.

A unique approach has been taken to the content of goals formulation. Rather than asserting allegedly normative goals on the basis of the analyst's judgment or the often rather vaguely stated goals of the Federal Government, this analysis has attempted to determine the goals of representative samples of all of the major participants in the BIA school system--the students, teachers, parents, administrators, and tribal councilmen, both Indian and non-Indian, educated and uneducated. This essentially consumer-oriented formulation of education system goals has recognized and reflected the diversity of views concerning Indian education among the participating parties. It is an explicit recognition of the hypothesis that an education system, like any other socio-political system, cannot long succeed without the consent of both those being educated and those who are educating them. As research has suggested, the person who is educating is not always the teacher, nor is it necessarily desirable that he should be; the student, likewise, is not always the person being educated, nor must he be.

The process of goals formulation has also been accomplished in an unusual way, necessitated by the unfamiliarity of some Indian students and parents with the very possibility of expressing education goals. The projective device of a school planning simulation has been used to stimulate goal choices by the sampled participants.

The strategy of data gathering consisted of a sample survey of school, cultural, and economic variables. Analysis of the education process was not limited to classrooms, teachers, and textbooks, but extended also to dormitories, homes, and factories. These non-classroom activities are considered to be at least as significant for educational results as formal education. In all cases, observation focused on defining problems in terms of discrepancies between the aspirations of one or more of the system's participating groups, and the realities observed.

The form of the data gathered and analyzed was both quantitative and qualitative, both objective and subjective. Many of the more subtle and significant problems still defy quantitication in forms that do not sacrifice the meaning; impressionistic data was therefore not rejected, but rather used to complement the objective data. Films and tape recordings were used to record interviews and classroom and dormitory observations wherever practical, to provide a permanent set of audio-visual documents permitting continuing study and later comparison.

Field trips were executed in several successive and increasingly extensive phases, so that the more expensive efforts could be made more efficiently on the basis of knowledge gained from the earlier, more modest investigations.

Information Survey and Problem Definition

An information survey was conducted to identify issues, determine possible sources of data, and to provide a basis for the definition and analysis of problems. Sources of information on the history and present state of Indian education and economic development included the Congressional Record, and many reports by the BIA, the Economic Development Administration, the U. S. Office of Economic Opportunity,

and the U. S. Department of Health, Education, and Welfare. In addition to scholarly and journalistic books, staff members read fictional and quasi-fictional work by and about Indians. A bibliography of the printed sources of information may be found in Appendix E.

The initial survey of information sources revealed several important gaps that could only be made up by extensive field trips and interviews. Although the anthropological literature on American Indian tribes is rich and extensive, surprisingly little of it is concerned explicitly with education or with contemporary levels of aculturation. In Clyde Kluckhohn's The Navajo,[1] for example, a better than average study of an Indian tribe, only a few pages are devoted to formal education; and almost no mention is made of in-school education. Although coverage of economic activities is somewhat greater, anthropological studies do not generally offer a comprehensive or quantitative review of tribal economics.

Another important gap in both the scholarly and the popular literature is the attitudes and inspirations of contemporary Indian youth, a subject crucial to educational and economic progress. Only two novels, Frank Waters' The Man Who Killed the Deer,[2] and Hal Borland's When the Legends Die,[3] and the journalist Stan Steiner's The New Indians[4] concern themselves with this key issue. (It is of some relevance that until the recent widespread student riots at universities, the attitudes of American youth in general received relatively sparse scholarly attention.)

With the exception of the Waxes'[5] pioneering studies on the Pine Ridge Reservation, and Havighurst's[6] earlier work on Indian students in cities, the literature on Indian students in the classroom is almost nonexistent. Considering that BIA amd public schools are probably the

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[1] Clyde Kluckhohn, The Navajo, Doubleday, Garden City, New York, 1962.
[2] Frank Waters, The Man Who Killed the Deer, Farrar and Rinehart, New York and Toronto, 1942.
[3] Hal Borland, When the Legends Die, Bantam, Pathfinder Editions, New York, 1963.
[4] Stan Steiner, The New Indians, Harper and Row, New York, 1967.
[5] Murray L. and Rosalie H. Was, and Rovert V. Dumont, Jr., "Formal Education in an American Indian Community," Social Problems, Official Journal of the Society for the Study of Social Problems, Vol. II, No. 4, Spring, 1964.
[6] Robert L. Havighurst and Bernice L. Neugarten, American Indian and White Children: A Socio-Psychological Investigation, University of Chicago Press, Chicago, 1955.

principal agent of change in Indian culture today, along with (to a lesser degree) the armed services and industrial employment, it is extremely unfortunate that so little scholarly attention has been given to so critical a subject.

The literature on the other two major agents of change, military service and employment, is also almost non-existent. This scholarly neglect can and should be remedied as soon as possible by government research grants on these subjects; even if action is taken immediately, however, it will be years before results will be available. The only immediate alternative source of information are the people who are involved in these issues: the Indian adults and youth, and the federal and local officials serving them.

The definition of problems for research thus required access to Indian and non-Indian individuals in the field. The first problem, therefore, was to plan a survey of Indian reservations and schools so that information for problem definition might be obtained directly. Since the resources for surveying almost 250 schools and over 50,000 students were limited, some logical basis for less than 100 percent sampling had to be established. The development of a sampling design required formulation of a typology of population-weighted Indian education types that would be fairly representative of most of the population. This is described in the following section.

The literature surveyed, sparse as it was, did identify several major problems that have since been confirmed by field surveys. These were:

1) Indian educational achievement far below the national average (an average lag in age in grade of more than two years), fewer high school graduates, and extremely few college graduates); (Coombs, et. al., The Indian Child Goes to School).[1]

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[1]L. Madison Coombs, Ralph E. Kron, E. Gordon Collister, and Kenneth E. Anderson, The Indian Child Goes to School, U.S. Department of the Interior, Haskell Press, 1958.

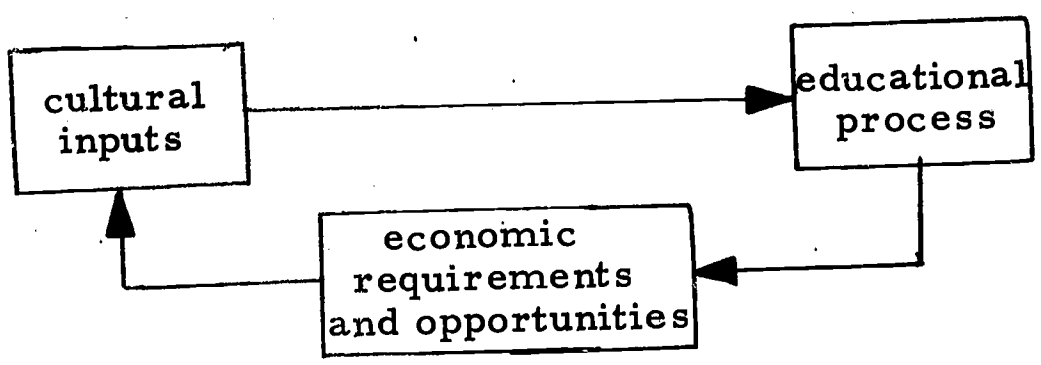
2) Indian poverty (an average annual family income of $1500 compared to the $7500 national average, ten times the national unemployment, much underemployment).

3) Major communications problems between Indian students and non-Indian teachers in BIA schools.

4) Problems of unplanned and confusing cultural change.[1]

Typology Development

The design of a representative sample of Indian schools and reservations was a major task of the first months of the BIA Systems Analysis. The sample design effort had two goals: to identify critical variables in the input-output relationships among the educational system, the reservation economy, and Indian culture; and to arrive at the best trade-off between intensive analysis of a small group of Indian schools and reservations, and less detailed analysis of a larger group. Sample points and variables were needed for each of the boxes in the simple flow chart below:



Development of a typology of Indian schools and reservations was the first step toward achieving the goals of the sample design effort. Three groups of Abt Associate, Inc. staff members, each developed a typology, using economic, sociocultural and educational variables. The groups dealing with the first two kinds of variables selected representative reservations for each type; the education group chose representative schools. (This preliminary sample was discussed with Mr. Zellers and Mr. Coombs at a briefing on July 15, 1968).

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[1] Clyde Kluckhohn, The Navajo, Doubleday & Co., Garden City, New York, 1962.

Education Typology

The education group drew up a list of thirty-five variables which might affect, or help to measure, the degree to which a school is successful in teaching its pupils and integrating itself with the reservation economy and with Indian culture. Some data was unavailable or difficult to collect; the education group therefore developed its typology around eight key variables:

- enrollment
- day/resident school
- on/off reservation
- grades taught
- tribal representation
- student/teacher ratio
- teacher turnover rate
- drop-out frequency

Location on or off the reservation and day or resident status were the first variables used, to establish four broad categories of schools:

- day schools
- on-reservation boarding schools
- off-reservation boarding schools
- mixed boarding/day schools

Within the day school category, enrollment and student/teacher ratio were used to define five types, among the on-reservation boarding schools, nearly all of which are in the Navajo Area, three types were established on the basis of size and tribal representation. Three small but distinct types were defined within the category of off-reservation boarding schools, on the basis of grades served, enrollment, and teacher turnover rates. Among schools with both day and resident students, enrollment and number of grades served were used to establish three types.

Chilocco, Haskell, and the Institute of American Indian Arts were classified as a unique type, on the basis of the important place these schools hold in the BIA's educational system as the only institutions offering post-graduate study.

The education group thus produced a total of fifteen types, and designated the school in each type which was closest to the mean values of the eight key variables for that type as a "sample school". For larger types, two sample schools were selected. The education group also chose a number of "deviational" sample schools, in cases where one or more schools in a type had very different characteristics from the other schools in that type.

For example, among off-reservation boarding schools, eleven schools were classified as a type on the basis of very mixed tribal representation, large enrollment, and fairly low teacher turnover and drop-out rates. Phoenix Indian was chosen as the sample school for this type. The education group also decided to visit Flandreau, since Flandreau has a much higher teacher turnover (26 percent) and drop-out rate (25 percent) than Phoenix Indian and the other schools in this type.

Economic Typology

The economic group used the data in the Population Support Capacity Studies, compiled by the BIA, to draw up a list of forty-one variables which might affect or help to measure the input-output relationships between BIA schools and reservation economies. Selecting those variables which proved to be the most discriminating, the economic group established types on the basis of the nine key variables listed below:

- income per capita, excluding transfers
- income earned outside the reservation
- commercial and industrial income
- income from mineral resources
- income from reservation-based government activities
- other reservation-based income
- income from forestry resources
- income from farming and ranching
- on-reservation land area not owned by Indians

The economic group also made use of available economic studies of Indian reservations, and tried where possible to type reservations on the basis of geographical proximity. Nine types were established, and a representative reservation was selected for each type.

One type included the Sioux reservation in the Aberdeen Area, among them, Pine Ridge and Rosebud. The major income sources for these reservations are farming, ranching, and government activities. Income per capita is low, averaging about $1300.

The Pueblo communities in the Albuquerque Area, such as Laguna and San Felipe, constitute another type, on the basis of proximity, high unemployment, and nearly complete tribal ownership of reservation land.

Reservations in the Billings Area, among which are Fort Peck and Crow, were classified as a type on the basis of relatively low reliance on government activities, large size, low population density, and dependence on farming and ranching as the major sources of income.

The Chippewa reservations in the Minneapolis Area were considered a type on the basis of proximity, high population density, low per capita income, increasing unemployment, and dependence on government activities as a major source of income.

The Apache reservations in the Phoenix Area were classified as a type on the basis of proximity and very low income per capita, clustered between $400 and $800.

The Navajo reservation, with the Hopi reservation which it encloses, was considered a distinct type on the basis of sheer size of territory and population, and diversity of economic activities.

In addition to these six major types, three special types were created for the industrializing Cherokees in North Carolina, the relatively prosperous reservations of Warm Springs, Yakima, Quinault, and Makah, in the Portland Area, and the non-white population of Alaska.

Socio-cultural Typology

The socio-cultural group chose thirteen social-demographic variables which might affect or help to measure cultural inputs to the educational system. A number of qualitative variables, to measure personality inputs to education, were also investigated through a review of empirical research and participant-observation studies on major Indian tribes. As some data was unavailable types were established according to six key variables:

- percent Indian blood
- percent non-English speaking adults
- percent illiterate adults
- percent homes with radio or television
- percent homes with electricity
- percent homes with telephones

The socio-cultural group established eleven types; a summary of the data and sample reservations will be found on pages 15-26. As with the economic typology the Navajo and the non-whites of Alaska both appeared as distinct types, by virtue of their large populations and unique characteristics. A representative reservation was selected for each of the eleven types.

Typology Interface

The typology efforts were conducted by three independent groups of Abt Associates, Inc. staff: there was, however, considerable consultation among the groups. The reason for this procedure was to investigate throughly the interface among criteria of "representativeness" from the perspectives of education, economy, and Indian culture before choosing one sample that would consider all criteria in an administrative feasible manner. It would, for example, be costly and ineffective to investigate Fort Berthold as a representative economy, Pine Ridge as a representative educational system, and Sisseton as a representative reservation culture, as all three reservations are in the same geographical area and are inhabited by Sioux. On the other hand, the communities in Pine Ridge serviced by representative BIA schools might be culturally and economically atypical.

The three typologies and samples, completed in June, achieved the identification of critical variables which was the first goal of the sample design effort. Achievement of the second goal, determination of the best trade-off between intensive analysis and broader coverage, depended on the selection of representative BIA schools from economically and culturally representative communities.

This interface of economic, cultural, and educational "representativeness" was made easier by the large number of educational types and schools within each type, offering many sample points to meet economic and cultural criteria. For example, the economic group assigned Jemez, Isleta, San Juan, San Felipe, Santa Clara, and other Pueblo communities to the same type on the basis of proximity, high unemployment, and tribal ownership of land. The socio-cultural group categorized these same communities as a type on the basis of low literacy, high percentage of full-bloods, and other variables. The education group assigned many Pueblo community schools to the same type on the basis of small enrollment, low student/teacher ratio, single tribe representation, location on the reservation, and day school status. Thus the school and community of San Felipe was selected as an educationally, economically, and culturally representative sample point.

Further steps were taken to determine the best trade-off between breadth and depth of coverage. Unavailability of data in general, and a lack of reliable achievement data in particular, emphasized the importance of first-hand observation of BIA schools and interviews with the staff. On the other hand, these same constraints suggested that returns on cultural and economic field trips diminished rapidly, and that resources of time and money could be put to better use on education survey field trips. The experience of the education group on an initial field trip to the Dakotas indicated that education field trips were similarly subject to diminishing returns, although at a slower rate. The size and geographical distribution of the final school sample was therefore limited to twenty-eight schools in the Dakotas, Oklahoma, Arizona, New Mexico, and Alaska.

Sample Characteristics

Including the four schools visited in the feasibility study, the sample comprised a school population of some 9,000 students (15 percent of the total BIA school population). Half the schools were entirely non-resident; the remainder were boarding schools, of which a few enrolled day students as well. About one-third of the schools had enrollments of over 500 students; another third enrolled from 200 to 500; the remainder enrolled fewer than 200. Half the schools were elementary, the remainder were secondary schools, or included both elementary and secondary grades.

About two-thirds of the schools enrolled students from predominantly one tribe, while the remainder enrolled students from two or more (and usually at least five) tribes. Each of the most populous tribes (Navajo, Sioux, Apache, Cherokee, Chippewa, and Eskimo) was represented by one or more schools in the final sample.

Most of the schools were located in remote rural areas, with about one-third located in small or medium-sized towns. The reservations serviced by the schools in the sample included most of the major reservation populations. A list of the schools in the sample is attached, describing each school in terms of major variables in the typology and sample design efforts.

BIA Area: Phoenix

Reservation - Papago

Population - 5358

Tribe(s) - Papago

Income Per Capita - $677

Percent Illiterate Adults - ~80%

SCHOOLS

Location	Santa Rosa Boarding On Reservation	Santa Rosa Ranch School On-Reservation	Phoenix Indian Off-Reservation	Blackwater (Community School) On-Reservation
Boarding/Day	77 Boarding 137 Day	Day	Boarding	95 Boarding 21 Day
Tribe(s)	Papago	Papago	Navajo Hopi Papago	Pima
Enrollment	214	33	1005	116
Grades Served	0-7	0-7	7-12	K-1
Instructional Cost Per Pupil*	Not Known	$439	$523	Not Known
Dropout Rate	0	Not Known	4%	Not Known
Student/Teacher Ratio	32	16	10	Not Known

*Information supplied by Phoenix Area Office

BIA Area: Navajo

Reservation - Navajo

Population - 110,000

Tribe(s) - Navajo

Income Per Capita - $1,457

Percent Illiterate Adults - 82%.

SCHOOLS

Location	Manuelito Hall Dormitory Off-Reservation	Borrego Pass School On-Reservation	Rough Rock School On-Reservation	Rock Point School On-Reservation	Tuba City Boarding School On-Reservation	Greasewood School On-Reservation	Tuba City Day School (Public School) On-Reservation	Red Lake School On-Reservation
Boarding/Day	Boarding	Day	Boarding	194 Boarding 26 Day	Boarding	596 Boarding 104 Day	Day	Day
Tribe(s)	Navajo	Navajo	Navajo	Navajo	Navajo	Navajo	Navajo-Hopi	Navajo
Enrollment	501	90	About 200	220	1161	700		179
Grades Served	8-12	0-4	1-8	0-4	0-8	0-8	0-12	0-5
Instructional Cost Per Pupil	0	$244	Not Known	$287	$282	$314	Not Known	$272
Dropout Rate	14%	Not Known	Not Known	2%	1%		Not Known	
Student/Teacher Ratio	0	25	Not Known	27	24		Not Known	24

BIA Area: Aberdeen

Reservation - Pine Ridge

Population - 10,495

Tribe(s) - Sioux

Income Per Capita - $1,286

Percent Illiterate Adults - ≈17%

SCHOOLS

Location	Oglala Community School On-Reservation	Loneman School On-Reservation
Boarding/Day	581 Boarding 493 Day	Day
Tribe(s)	Sioux	Sioux
Enrollment	1074	255
Grades Served	0-12	0-8
Instructional Cost Per Pupil	$493	$555
Dropout Rate	10%	1%
Student/Teacher Ratio	25	22

BIA Area: Aberdeen

Reservation - Turtle Mountain

Population - 7,137

Tribe(s) - Chippewa

Income Per Capita - $1,245

Percent Illiterate Adults - ≈10%

	SCHOOLS		
Location	Turtle Mountain Community School On-Reservation	Roussin School On-Reservation	Flandreau Off-Reservation
Boarding/Day	Day	Day	Boarding
Tribe(s)	Chippewa	Chippewa	Mixed
Enrollment	1048	47	675
Grades Served	1-12	1-6	9-12
Instructional Cost Per Pupil	$465	$689	$739
Dropout Rate	5.6%	0	25%
Student/Teacher Ratio	15	23	16

BIA Area: Albuquerque

Reservation - San Felipe

Population - 1395

Tribe(s) - Pueblo

Income Per Capita - NA

Percent Illiterate Adults - ≈13%

SCHOOLS

Location	San Felipe School On-Reservation	Ramah[1] Dormitory On-Reservation	Institute of American Indian Art[2] Off-Reservation
Boarding/Day	Day	Boarding	Boarding
Tribe(s)	Pueblo	Navajo	10 Tribes
Enrollment	132	158	260
Grades Served	0-2	1-6	9-14
Instructional Cost Per Pupil	$374	0	$1019
Dropout Rate	1%	Very Low	4.5%
Student/Teacher Ratio	26%	0	8

[1]Ramah public school is adjacent to the BIA dorm

[2]Reports directly to the Central Office

BIA Area: Anadarko

Reservation - none*

Population -

Tribe(s) -

Income Per Capita -

Percent Illiterate Adults -

*accurate data on Indians in different areas of Oklahoma was not available

SCHOOLS

Location	Haskell Institute Off-Reservation	Concho Demonstration School Off-Reservation	Chilocco School Off-Reservation
Boarding/Day	Boarding	Boarding	Boarding
Tribe(s)	Mixed	Mixed	Mixed
Enrollment	1138	65*	1119
Grades Served	13-14	7-9	9-14
Instructional Cost Per Pupil	$996	$610	$610
Dropout Rate	24%	11%	12%
Student/Teacher Ratio	16	Not Known	13

*In 1967, for which data was available, Concho operated as a rehabilitation center (Cf BIA Statistics Concerning Indian Education, 1967.)

Hypothesis Formulation

In order to develop survey instruments relevant to the problems of concern to Indian education, it was useful to formulate hypotheses concerning specific aspects of education, the economy, and socio-cultural factors. The variables on which the data gathering effort would concentrate were thus initially identified.

The hypotheses were formulated on the basis of the initial literature survey, interviews, and preliminary analysis of available statistics. The findings of previous education research were applied to Indian-specific situations to generate new hypotheses. For example, the previous finding that classroom motivation is increased with the degree of active student participation, all other things being equal, was applied to Indian schools.

A complete list of the hypotheses thus generated may be found in the Second Monthly Progress Report (August 1, 1968).

It was not possible to either confirm or reject definitely the many hypotheses generated, due to unanticipated problems of statistical data availability. Subsequent checks of school records indicated that the planned testing of hypotheses was not feasible, owing to the state of the available school data. For example, there was very little standardized student achievement data available in a form that could be readily correlated with teacher characteristics. Despite the impracticality of resolving conclusively the many hypotheses, their generation was very helpful in sensitizing the researchers to issues that were subsequently investigated in the field.

Survey Instrument Design

After the hypothesis formulation stage was completed, the analysts were eager to get into the field and begin testing their speculative models. However, this could not be accomplished by haphazard methods; a systematic and coordinated effort was required. A two-step process of preparation for actual field work was followed. First, all of the hypotheses were broken down and organized into lists of variables and data needs. In the second stage, these were reconstructed as strategies and survey instruments.

Each of the task forces designed its survey differently. During the month of July the education group abstracted criteria from the hypotheses for determining the success of the various educational programs and the validity of the hypotheses. Success criteria were developed for three areas of BIA education program impact: pupil performance; internal, or in-school programs; and external, or community programs.

Instrumental variables or programming factors which could affect the quality of the criteria variables were associated with the criteria in each category. The relationship of programming factors and instrumental variables to success criteria was represented on a matrix, based on the assumption that increasing the magnitude of any of the programming factors above certain thresholds would affect the various criteria. This provided a compact illustration of hypothesized correlations between programming factors and measures of success, as well as an information-gathering checklist.

Many of the correlations between performance criteria and programming factors were quite direct and could be tested and measured with objective information accessible in school records or from school administrators. A preliminary school data questionnaire, requesting information on school facilities, expenditures, staffing, curriculum, extracurricular activities and services and pupil performance was developed and sent to the principals of all the schools in the sample.

Other correlations, such as those between the quality of the school program and the long-range success of individuals and communities, were less directly verifiable. To test these, the staff needed both hard and soft field data on many known intervening variables as well as information that would uncover intervening variables that were not apparent.

The staff realized that the effort undertaken in the field would be more informal than that carried out at the Cambridge office in two respects. Much of the data collected would be more subjective (e.g., information on classroom process rather than the output of that process in terms of grades). Furthermore, the collection methods would be more personal (face-to-face interviews, on-the-spot observations and filming, etc.).

As a framework, information goals were matched with field resources. In some cases, goals had already been defined and the staff simply had to identify relevant field resources. In other cases, the staff was aware of potential resources and needed to identify or generate information categories in which particular resources would be most useful.

The matching of goals to resources was carried out primarily by the education specialists on the staff. These people then worked with a psychiatric social worker and staff members, familiar with both the local Bureau representatives and the Indian communities, to develop relevant and diplomatic interview guides. The final draft of the survey instruments was reviewed by the entire field staff.

Guides were developed for interviewing school administrators, guidance counselors, teachers, dorm staff, students, parents and local community leaders. The general information categories covered by the interview guides were:

<u>School Administrator, Teacher, Counseling and Dorm Staff</u>:

Personal background, education, and experience
Job description and job related attitudes
Job goals
Major satisfactions and constraints
Relationships with other staff, students, and local community

<u>Students:</u>

Educational goals
Perceived relevance of education to future plans
Perceived own achievements toward future goals

<u>Parents and Community Leaders</u>:

Educational goals
Participation in school programs and tribal activities concerned with education

Observation guides were developed for gathering information on general school atmosphere, physical facilities and services, and classroom processes, particularly student-teacher interaction.

EDPLAN, a projective planning exercise, was used to collect information on student and teacher preferences in school planning and to sensitize students and teachers to some major educational issues and considerations. (See Appendix A for a complete set of field instruments.)

In addition to these standardized devices, films were used to record examples of the best and worst programs, practices and processes within the schools. Most of the filming was done either in the classrooms and at the EDPLAN sessions, where it seemed that film was the most sensitive means of documenting the subtleties of student-teacher interaction or the spontaneity of player response to the planning game.

The survey instruments served both as data collection instruments and as means of initiating conversations with relevant resource people on a more subjective level. The latter function was invaluable during the first field trip, when many of the staff were observing the Bureau's education system for the first time.

By the end of the first field trip it was no longer necessary to actively and consciously seek information concerning variables on all levels. What was needed instead was a deeper perspective on high priority concerns. Consequently, between the first and second field trips the survey instruments were revised to make them shorter, in order to give staff members an opportunity to speak with more people closely involved with the issues from a range of viewpoints. In addition, they were focused in greater analytical depth on more nuances of the most critical problems.

Economics Task Force

The economics group followed a similar procedure to develop its survey design. From their hypotheses, the economists abstracted information goals for the following general categories:

Regional Economic Development Planning: information on planning objectives and the formulation of regional plans, including all on- and off-reservation economic development.

Physical Resources: information describing regional natural resources, both actual and potential, and their accessibility. This included data on basic infra-structure.

Human Resources: information on population magnitude and dispersion, growth trends, labor force participation rates and employment, skill level of the labor force (actual and potential), regional skills training potential (availability of education system and vocational training to the reservation labor force) and cultural attitudes toward work.

Industrial and Commercial: information dealing primarily with private businesses, existing or potential, on or near the reservation.

The kinds of problems the economists were dealing with did not lend themselves to formal statistical data gathering and economic factors varied for each reservation. For this reason, economists did not develop formal survey instruments, but rather operated flexibly within these general categories of information.

The sources for data on existing economic activity and development plans were mostly Bureau and tribal officials, and representatives of private business. Non-official community members were sought out for information such as family budgeting, where individuals buy and sell, etc.

Management Information System Task Force:

The Management Information Task Force developed one formal survey instrument which they used during the first month of the study to investigate internal communications and activities of the Education Division. Branch and administrative staff heads were interviewed to gather data on information flow, information needs and decision nodes within the Education Division in Washington.

The Management Information System group later carried out similar interviews at two area offices (Phoenix and Aberdeen) and two agency offices (Pine Ridge and the United Pueblo Agency). Although no formal survey instrument was used during these interviews, they were structured to gather the same kinds of information collected earlier at the Washington office.

Socio-Cultural Task Force:

The Socio-Cultural Task Force did not carry out any extensive data-gathering in the field. Information on the most critical socio-cultural variables was collected by the economics and education field staffs. No separate survey instrument was used.

Field Trips

Three large-scale field trips were conducted in the course of the study, one by the economics task force and two by the education group. In addition, two shorter trips were made by the economists, one by the education task force and three by the Management Information Systems staff.

A five-man team from the economics task force went to the Southwest. From July 28 until August 4, they collected economic and relevant socio-cultural data. Their survey strategy operated by areas: The first day in each area was spent interviewing local BIA officials. On the second day, the field team moved to the reservation to interview agency and tribal officials, and then met individually with local businessmen and non-official community members.

The three centers for the areas covered on this trip were Albuquerque, Phoenix and Gallup. In Albuquerque the group met with office administrators and representatives from the social and employment services departments. They then visited the United Pueblos Agency where they briefed and interviewed agency and tribal officials. Following group discussions, the team broke up to travel around the San Felipe pueblo and talk with villagers, farmers and trading post operators.

From Albuquerque, the team proceeded to Phoenix, where the briefing and interviewing pattern was the same. The Papago, White Mountain Apache and Gila River Reservations were covered from the Phoenix base.

Gallup served as a base for visits to the Navajo reservation. Headstart and Public Health Service representatives were interviewed in Gallup, and members of the team attended a BIA teacher orientation session.

On the Navajo reservation one member met with the chairman and the comptroller of the Tribal Council, and was invited to brief the Council the next day. Other researchers met with Bureau administrators and personnel from the census, law and order, land and road management, employment assistance, social services, soil conservation and education dapartments. Interviews were also conducted with trading post operators, farmers, herders and rug weavers.

The team conducted a total of six group briefings and discussions with administrators, twenty interviews with Indians living on the reservations, and about fifteen interviews with individual government and tribal officials and businessmen.

Two shorter trips were made by the economic task force, one to the Warm Springs Reservation and on to the Turtle Mountain and Pine Ridge Reservations. The first trip was made by one Abt Associates staff member, and lasted for two days. He conducted ten personal interviews with tribal officials, BIA representatives and officers of the Warm Springs Forest Products Industries and the Kah-Nee-Ta resort. Another staff member visited Turtle Mountain and Pine Ridge, spending about two days on each assignment. While on the reservation, he spoke with tribal and Bureau officials, Vista workers and managers of small businesses located there.

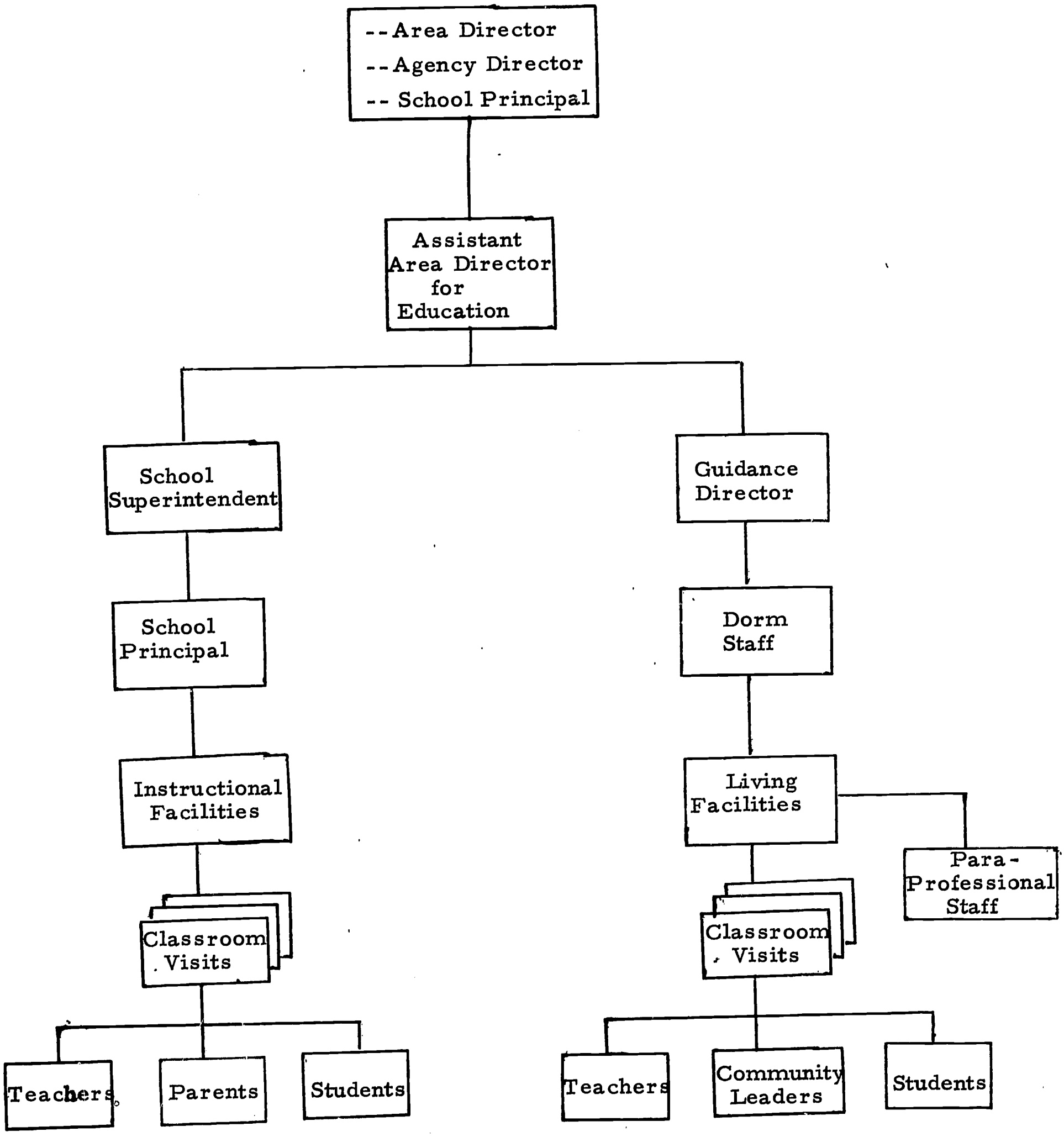
Most of the interviews from the Southwest and northern plains trip were taped. Extensive notes taken on the Warm Springs trip were summarized in a written report. In addition to interviews, reports, studies and statistical data were collected on all trips.

A three-man team from the education group made a preliminary visit to the Pine Ridge Reservation between August 26 and 28. The major objective of the trip was to brief Chairman Poorbear and the members of his council on the objectives of the Abt Associates study. The group also talked with three staff members at the public health service hospital, the agency superintendent, the principal of the public elementary school, three Vista volunteers, a teacher at the Holy Rosary Mission School and three local Indians involved in the Headstart program and the Loneman Demonstration School project. Two members of the team attended teacher orientation meetings at the Holy Rosary school and Oglala community school.

The major field work for the study was accomplished during two education field trips, one to the North Central and Plains states between September 22 and October 4, and a second to the Southwest between October 13 and 31. A total of twenty-four schools (five public, nineteen BIA) and two BIA dormitories was visited during these two trips.

Area and agency directors, assistant area directors for education and school principals were contacted before field work began. The administrators were informed of the purposes of the study and questioned on whether or not the schools chosen for the sample best fulfilled those purposes.

OPERATIONS SCHEDULE (Education Group)



The rest of the operations schedule (see attached chart) provided two researchers to visit each school for a period of two days, after clearing the visit with BIA staff at the agency and area offices. They shared responsibility for interviewing administrators, teachers, the non-instructional staff, students and parents, and for running the projective planning exercise EDPLAN. This schedule was followed closely in the field, although more than two people usually visited the larger schools.

Thirty-five administrators (superintendents, principals and assistant principals), sixty-three teachers, 170 Indian students, forty-six parents and community leaders, eighteen guidance counselors, and twenty-four dorm staff were interviewed; a total of 356 persons were interviewed. Another 250 teachers, 250 students, and fifteen parents participated in the EDPLAN exercise. About 20% of the EDPLAN sample were among those interviewed, so that a total of some 750 different individuals (including about 250 teachers and about 400 Indian students) contributed their views concerning educational objectives.

In addition to interviews, 147 classrooms were visited and observed in the course of both trips.

The research team was accompanied by a two-man film crew which shot about 7000 feet of film, mostly of classes and the EDPLAN sessions.

All interview and observation data were recorded on standardized forms developed before the field trips. Findings have been summarized in the Monthly Progress Reports and below.

The Management Information Systems group conducted five field trips, two to area offices (Aberdeen in September, Phoenix in August), two to agency offices, and one to the Indian Affairs Data Center in August. One researcher made the trips to agency offices. In the course of these trips, about twenty-six interviews were held with area directors and their assistants, reservation principals, education specialists and representatives from the budgeting, statistics, employment assistance and social services staffs. Notes were taken during these visits, and sample reporting forms were collected.

The interviewers who visited the Indian Affairs Data Center spoke to officers in charge of the total operation and its component section (programming, filing, etc.). They conducted ten interviews and collected samples of files in each official's area.

Data Reduction and Analysis

When the field trips were concluded, the analysts had accumulated a tremendous amount of data. Although the magnitude and complexity of the data made analysis difficult, a detailed analysis was made of most of the information, using various techniques, and a number of significant conclusions were reached.

On the socio-cultural and economic aspects of the research, the sparse data for these subject areas was not used much beyond the development of the typology and the written reports from the field trips. Some Census and Economic Development Administration data was used to estimate returns of education and selected reservations' development potential. However, since only unstructured field interviews were conducted a systematic analysis of the information from the field was impractical.

The quantified data collected for the education typology matrix included information on all BIA schools. Quantifiable information collected from the sample schools completed the set of hard data upon which analyses were carried out.

Data reduction was difficult because the BIA had accumulated data in such a way that several aggregations of information were incompatible. For example, both financial and achievement test data were supplied by the area offices upon request. In some cases, the information was compiled for each school, in others for each agency and, at least once, for each area. The chronology of the information often differed from area to area and school to school and, in the case of achievement test data, different tests were used by different areas.

Before analysis could begin, this data had to be made comparable. This was done in a variety of ways. Where necessary, gaps in the data were considered as mean values. Some data was disaggregated or aggregated to arrange it into its most useful form, and often assumptions of compatibility were made for comparative purposes. The most significant problem was caused by the achievement data. Individual scores from three tests based on national norms were used. They had to be aggregated for each school, changed into grade-placement scores when necessary, and compared in relation to chronological differences in the data of administration. Uniformity in the national norms was assumed, even though one test appeared to be slightly easier than the other two. Also, when determining average years lag in various subjects, the high school data was inconsistent because different tests were taken by different groups in different grades. The results for elementary school, however, were more consistent, and indicated a definite pattern of increasingly retarded achievement gains.

The data collected on the field trips was subjective in nature, as indicated by the description of the interview guides used. Ten field instruments and the EDPLAN exercises were used to provide the major inputs to the analysis of the field trips. To these must be added the subjective observations of thosefield researchers who got to meet the people, see the environment, and examine the subtleties of attitude and demeanor which are overlooked or provoked by a structured interview. The findings, conclusions and recommendations of this report are based on all these factors.

The ideal administration of the field instruments required more time at each location than Abt Associates was allowed. For this reason, the length of the interviews and answers to questions varied because of differences in time allowed and individual interviewers. Although some forms were not completed, the highest priority questions were directed at the beginning of the interview, and results of the most important discussions were included in the analysis. The most serious setback to a meaningful analysis of the attitudes and ideas of an adequate sample of administrators, teachers, students and others was the loss of two separately mailed packages of complete interview forms. Both were

mailed from different towns, one on the Navajo Reservation and the other from Gallup, and included most of the data on six schools. Neither of them has ever arrived at Abt Associates' office, even after a reward was offered.

Although these constraints made an effective, semi-quantitative analysis of the data difficult, the use of a variety of analytic techniques allowed a thorough examination of all the information collected. A computer program was designed to determine simple correlations and was applied to the preliminary quantitative data that was collected. An analysis of returns for different levels of education was made using 1960 Census data. Analyses were made of teacher characteristics, expenditures, Indian college enrollment and school retention rates; and these were compared to national norms. Matrices were made for the most important interview questions and answers for all interviewees, and the agreement and disagreement in answers was assessed. A detailed comparison of classroom activities and interactions was carried out. Results of the EDPLAN exercises were tabulated, analyzed, and compared with achievement test results. Finally, subjective analyses of school atmospheres, facilities and equipment were made using the "General Atmosphere," "Dormitory Checklist," and "School Facilities Checklist" instruments for basic data.

The findings resulting from the use of these various analytic methods will be discussed below. In conclusion, it should be noted that Abt Associates Inc. has attempted to remain flexible to the problems arising from different kinds of information, incomplete or unreliable data, and the chance occurrences that hamper any research effort. This flexibility has allowed analyses, conclusions and recommendations to be made with some certainty of their validity and relevance.

Film One: Problems of American Indian Education

The film, Problems of American Indian Education, was produced on location at over twenty different schools and reservations; there are no actors, and no studio. The film derives its communication impact and value from its authenticity. As teams of social scientists and educational specialists conducted research in the field, they were accompanied by a two-man production team from the Communication Center at Abt

Associates. The use of light-weight, battery-operated cameras and tape recorders permits versatility in the field. The camera which was used in all interior locations (such as class-rooms) was inaudible in operation and offered almost no subject distraction from the activities which it is recording. No provision was made for elaborate lighting or staging; the emphasis of the film was on authenticity. Approximately nineteen thousand feet of high-speed film were exposed during this phase of production.

Because the film represents, in essence, an audio-visual synopsis, the post-production scripting was delayed until the hard data collected by the several research teams had been ordered and analyzed. The problems revealed by this data-analysis provide the thematic framework for the film. Most B.I.A. personnel are aware of some of these problems but have never before been able to study them in the context of wide geographic and tribal comparison. Also unique to the content of the film are the relationships which are established between the different problems, and their over-all relationship to the problems of effective education.

The film documents sixteen problem areas objectively, through use of narration related to the findings of the research, and subjectively by presentation of corroborative opinions of individuals who speak and act from their context of direct and personal confrontation with, and subjection to, the problems. It is felt that exposure to a wider view of these problems may help to enable B.I.A. staff to deal more effectively with them.

CHAPTER II

Education Findings

The findings of the systems analysis of the BIA Education Division fall into three categories: definition of objectives; analysis of present educational and economic processes; and evaluation of the results of these processes. The difference between the objectives and the results defined the degree of remedial action needed. An understanding of the processes involved allowed for the generation of programs to close the gap between present results and realistic goals. On the basis of these findings, a wide range of significant changes in educational policy appears both necessary and possible.

EDUCATIONAL OBJECTIVES

The Importance of Information about Education Objectives

An educational system is a dynamic organization, continually evolving and changing. It alters as do the student and teachers who make it up, and as the requirements of education change in response to the broader development, socio-economic and technological, of society as a whole. Improved knowledge of instructional techniques, and alterations in the public conception of the role of education in society, cause further evolutionary development in educational systems.

The nature of these changes, and the rate at which they take place, vary widely, however, from one educational system to another. A system which attempts to maintain absolute will simplify ultimately have change forced upon it; voluntary change, as in political affairs, is likely to be more responsive to the needs of the student and of society, and more conducive to the lasting stability of the system.

An education system, the administrators of which recognize the realities of technological, economic, political, and socio-cultural changes in the broader society, has the opportunity continually to adapt the system to new needs and constraints. This responsiveness to reality requires information about what is desirable and what is possible. The policy of a rational organization is based on maximizing the realization of objectives withint the constraints of money, time, personnel, andother resources; that is, on maximizing the desirable within the possible. Appropriate, carefully defined educational objectives are thus the prerequisite for rational planning of policies, programs and budgets of an educational system.

The educational objectives of the key actors in an education system also constrain what is possible, as they will tend to behave in ways consonant with their own goals. Compelling behavior in conflict with personal goals entails economic, psychological, and political costs; rational education system planning requires, therefore, information on the educational objectives of all key actors, including administrators, teachers, students, and parents. In some cases, a policy or program may be worth the cost of conflict with the objectives of one or more of these groups of actors; such costs must, however, be justified by the expectation of the fulfillment of higher overall objectives.

In a less direct, but still significant, sense, the educational objectives of the key actors in the system tend to reflect their expectations of results of the educational process; these expectations strongly influence the results. Educational research has shown that the teacher's expectations of her students are closely related to the students' achievement; when teachers expect failure, students tend to fail. The converse also appears to hold, as demonstrated by a psychological experiment in the "self-fulfilling prophecy" (Scientific American, November 1967, pp. 34-44).[1] Children were randomly divided into two groups. The teacher of one group was told that the children were "likely to show unusual intellectual gains;" these children showed a mean achievement gain of about 50 percent more than the control group (12.2 as against 8.4 points).

Owing to the self-fulfilling tendency of teacher (and student) expectations, it is important that expectations be realistic and based on an understanding of the student's cultural and family background. "Realistic," as used here, is often a euphemism for "low;" in the case of Indian education, however, the opposite is true. Teachers' objectives tend to be modest, reflecting low expectations of their students, and resulting in low student performance. The educational objectives of teachers, administrators, and perhaps also of students, may thus provide an early warning of subsequent failures.

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1 See also Robert Rosenthal and Lenore Jacobson, Pygmalion in the Classroom: Teacher Expectation and Pupils' Intellectual Development, New York: Holt, Rinehart and Winston, Inc., 1968.

Another reason that the educational objectives of students and teachers are important information for program planning is that they indicate what sorts of programs are likely to work. Students and teachers are most willing to learn what interests them. Assuming there is considerable transferability between one set of things learned and many others, it may be argued that the best way to maximize learning in general is to emphasize subjects of interest to the learner. This is not quite a tautology; we are not talking merely of arousing the learner's interest in a subject otherwise uninteresting to him, but of sustaining it by tailoring the entire content to his interests. This "consumer orientation," an attempt to maximize motivation, requires information on the objectives of both students and teachers.

In a cross-cultural education system, such as that administered by the Bureau of Indian Affairs, the determination of the educational objectives of parents, students, teachers, and administrators assumes added importance, as these key actors are sometimes involved in cultural conflicts critically affecting the results of the education process. For example, there is sometimes a conflict of objectives between Indian parents who want their children to return home to work after finishing high school, and the students, who often want to leave the reservation. There are subtle cultural conflicts between students and teachers over what constitutes acceptable behavior and language. The nature of such conflicts can often be determined by observation and comparison of the education objectives of the protagonists. To deal with such conflicts constructively, it is essential to determine the conflicts of objectives which create them, and the areas of agreement on objectives which can provide a basis for resolving the conflicts.

The determination of the educational objectives of the principal participants in the education system is also essential for coordination with national policy. If significant conflicts of objectives are found, then the requirements of national policy must either be conveyed to the participants in the system or modified to conform to their preferences. Even if national and local educational objectives cannot be reconciled, it is important for the system's administrators to be aware of the goal conflict, so that they may plan their policies and programs accordingly.

The student interviews concentrated on educational and post-educational aspirations and expectations. Specific questions were directed at the amount and type of education desired, occupational goals, and the relevance of schooling to these occupational goals.

The questions on the interview guides directed at the respondents' education objectives are listed below:

Students

What do you want to do when you get out of school? Where and from whom did you hear about it?

Does school prepare you for this? If so, what courses or activities prepare you?

Do you think you'll succeed?

How much do you want: high school vocational college academic college graduate level

What have you accomplished that helps your objectives?
courses _____
training _____
personal qualities _____
other _____

What do you need most to prepare for what you want to be?
course (H.S.) _____
vocational college (subjects) _____
academic college (subjects) _____
training _____
personal qualities _____
other _____

Parents

Do you care if your child goes to school? What do you do to make your child go to school?

How much education do you think your child needs? Why?

What kind of job would you like your child to have after he leaves school?

What do you think your child's goals are (education, occupation, marriage, etc.)?

What are you doing that will help your child reach his goals?

What type of school do you think is best for your child to attend in order to achieve his goals? Public____ Day (BIA)____ Boarding (BIA)____ Mission____ Other____ WHY?

Would you like your child to be taught how to speak and write the native language? Why?

Teachers

What do you think are the most important things this school should do for students?

Besides teaching basic subjects, is it also necessary to develop the personality and social skills of Indian students? If so, how do you accomplish this?

Should the parents be more involved with the school either formally -- planning, advisory boards -- or informally?

Administrators

What is the most important thing the school should do for the students? Obstacles?

Are there any current programs or activities involving local community?

Are there plans for future community programs; what constraints do you foresee?

EDPLAN Game

The EDPLAN school planning simulation was the second method used to determine educational objectives, primarily of teachers and students (only a few parents and administrators participated). EDPLAN is a simulation game, in which three competing teams first weight their educational goals for a hypothetical school; then allocate a budget to several programs designed to achieve these goals; and finally, evaluate and score the other teams' program budget in terms of how well it is likely to achieve that team's goals. The game was usually played by three teams of five players each, in the school library, cafeteria, or a classroom. The average playing time was an hour and a half.

At the end of each EDPLAN simulation, the planning sheets were collected, and the choices of players concerning educational priorities were recorded. Observation, films, and tape recordings of many of the lively

discussions among the players provided useful, albeit unstandardized, data for determining the educational objectives of teachers and students.

The roughly 200 classroom observations constitute only an indirect means of determining educational goals; in the case of teachers, it is probably indicative. On the assumption that the formal classroom process is controlled principally by the teacher, it is possible to infer some of the educational objectives of the teachers from the relative importance they place on different subject areas and means of instruction.

Summary of Findings about Educational Objectives

Indian students want to go to college; three-quarters of them said so specifically. About one-third want to attend a two-year junior or technical college; the rest want to attend a regular four-year college. When asked about their conceptions of college, most students appeared to have a reasonable understanding of what was involved. A small fraction (3 percent) desired graduate studies at the masters or doctoral level. Fewer than 18 percent of the students wanted no further education beyond high school. The EDPLAN results confirm this evidence of the high value placed on the objective of college education; less emphasis is placed on job training. Both the interviews and the simulations showed that the students desire a firm grounding in the core subjects of English, mathematics, and science. The students are divided on the issue of Indian culture and language. Some regard it as an education objective, while others do not; it is, surprisingly, an issue of little importance to most students.

Teachers in BIA schools, on the other hand, do not appear to consider academic achievement nearly so important as do their students. When asked to name "the most important things the school should do for the students," only about one-tenth of the teachers mentioned academic achievement as an important goal. In both the interviews and the EDPLAN simulation, the teachers stressed the educational objectives of personality development, socialization, and "citizenship." It seems clear that the teachers have as their principal education objectives the socialization and cultural adaptation of their students, rather than their academic preparation and development.

EDPLAN GAME RESULTS

(Lowest Score Indicates Highest Goal)

Goals

Students

Jobs	(2.6)
College	(2.8)
Professional	(3.0)
Social Life	(3.2)
Integration	(3.4)
Local Comm.	(3.5)
Indian Culture	(4.0)

Teachers

Emot. Mat.	(2.2)
Integration	(2.2)
College	(4.3)
Local Comm.	(4.5)
Indian Culture	(4.7)
Jobs	(5.0)
Social Life	(5.5)
Professional	(6.2)

Programs

Students

Guidance Counseling	(2.3)
Teachers Sp. Indian	(2.4)
More Teachers	(2.4)
Indian History Course	(3.2)
Books & Classroom Mats.	(3.2)
Parent Education	(3.5)
Vocational Training	(4.0)
Field Trips	(4.0)
Beautification	(6.5)
Educational TV	(7.0)

Teachers

Vocational Training	(1.3)
More Teachers	(2.3)
Books & Classroom Mats.	(3.5)
Guidance Counseling	(3.8)
Indian History Course	(4.3)
Field Trips	(4.8)
Educational TV	(6.5)
Parent Education	(7.0)

Teachers, like students, are divided on the issue of Indian culture; most of them tend to regard it as either a minor objective or a threat to acculturation.

Administrators generally responded similarly to teachers; this is not surprising, since all of them were formerly teachers, most quite recently. Only one administrator of the 35 interviewed was concerned primarily with the academic achievement of the students. The administrators do not generally express any need for a more intellectually challenging curriculum or for college preparation. They are more interested in running the school efficiently and offering an orderly, socially supportive program of general education combined with vocational, job-oriented training. In this respect, they are more economically aware and output-oriented than the majority of the teachers.

The educational objectives of elementary school administrators also emphasize the school's role in fostering the students' physical and emotional well being. Their concern is to compensate for what they believe to be the physical and emotional impoverishment of Indian children.

Parents of Indian students stand somewhere between the students, on the one hand, and the teachers and administrators, on the other, in their educational objectives for their children. They are divided between those who, like the majority of the students, desire a college education, and those who, like most teachers and administrators, believe that high school and/or vocational training is sufficient. The Indian parents see education as instrumental to job placement and success. Thus the issue of whether or not to teach Indian language in the schools is resolved on the basis of employment expectations; if there are few jobs available on the reservation, English language training is stressed as an objective, as Indian language training is regarded as useless for jobs off the reservation. On the other hand, where jobs are available on the reservation, as on the Navajo reservation, Indian language and culture are considered to be important educational objectives, as they are economically feasible.

Analysts carrying out this study of Indian education inevitably found themselves developing their own educational objectives. These tended to

agree with the views expressed by most of the students that a college education was occupationally and culturally desirable, and feasible for most students, and that the Indian language and culture issue was much less urgent than the development of the reservations to provide upward mobile jobs to educated Indians. The analysts also tended to agree with the students that what they needed most from the schools was strong intellectual development, rather than the "character development" and "citizenship training" stressed by many teachers.

The analysts tended to agree with those Indian leaders who argue that education can achieve both the maintenance of cultural identity and the development of employable skills at all levels through a more intellectually demanding and relevant curriculum.

Community and parental involvement in the schools seems to be an educational objective chiefly of administrators and analysts. Many students are apparently uncertain or ambivalent in this regard; although some of the better teachers desire it, most are not concerned. The parents are also not generally interested; it is unclear whether this is the result of a genuine lack of interest or of unawareness of the possibility of involvement in the school.

Interpretation of the Findings about Education Objectives

The broadest areas of agreement among all the groups concerned were the objectives of more and better education and of education to increase the student's employability. Job preparation was rated an important, although secondary, objective by Indian students, teachers, administrators, and parents; students thought it more important than did most teachers. Considerable agreement also existed among students, teachers, and administrators concerning the objective of integration of Indian students with other tribes and other races; this, the objective rated second in importance by teachers, was, however, only fifth in importance to students.

There were two similar divisions in opinion between students on the one hand, and teachers and administrators, on the other, concerning the objective of maintaining Indian culture. In both groups the majority felt that

cultural preservation was an educational objective of low priority, while a minority asserted its importance. Teachers declared the teaching of Indian culture to be more important than did Indian students, a statement of belief ironic in view of observers' reports of teachers' actual behavior. Development of the reservation and of the local community was an objective of slight importance to both teachers and students. There, the similarities among the education objectives of the four groups end.

The most striking conflicts of education objectives are those between Indian students and teachers as to the desirability of college education. Not only did most students consider college preparation the primary objective, but some also considered graduate education for the professions a major objective. The majority of the teachers not only did not consider college preparation the primary objective, but almost totally rejected graduate education as a goal. Clearly, the students have much higher educational aspirations for themselves than those thought appropriate for them by their teachers. This suggests, on the part of the teachers, a self-fulfilling prophecy of student intellectual failure.

A complementary disagreement concerning educational objectives exists between students and teachers concerning the value of socialization, "emotional maturity," "development of improved self-image," and "citizenship." This area of essentially non-academic and non-intellectual student behavior is, apparently viewed, very differently by students and teachers. The students usually assigned the lowest priority to these objectives, while they are by far the foremost educational objectives of the teachers. It appeared as though students strive for academic achievement and college or job entry, while their teachers attempt to reconcile them to relatively low stations in society by "character development."

This suggests an important conflict in the students' and teachers' views of the role of the teacher. Many of the teachers apparently still see their role as that of "civilizing the native;" the students, on the other hand, believe that teachers should be supplying them with the intellectual tools for advancement. Perhaps even more important, it suggests that most teachers are either ignorant or skeptical of the desire for higher education

felt by most Indian students. In any case, it is most unlikely that many of the teachers can now give the students the education they want and need, because they are not even trying to do so.

Viewing the relative importance attached to various educational objectives by teacher and student groups as a whole, there are some remarkable and probably counterproductive contrasts. The typical (though by no means every) teacher seems to feel that the principal need of the Indian student is for emotional and social development, despite the severe achievement lag (an average of three grade levels behind whites of the same age) of Indian students. One or both of two explanations seems likely: either the teacher believes that there is no real need for the Indian student to achieve intellectually, or thinks that emotional development (the formation of a positive self-image) is the precondition for intellectual development.

The former belief is unresponsive to Indian student aspirations, and obsolete socially and economically; it borders on being benevolently patronizing, protective, and, in a sense, "colonialist." It is a view that can, however, be understood in the context of those reservations (of which there are too many) where education buys nothing in social or economic advancement, because there are no employment opportunities which require it.

The latter belief, that positive self-image is a precondition for intellectual development, is probably partly correct, at least in theory. However, there is no reason to assume that Indian students' failure to achieve academic success is **the** result of a lack of positive self-image; it may be explained equally well by an insufficiency of effective instruction.

The analysts found, from their observation of over 100 classes, that the quality of instruction was rarely sufficient to motivate students already hampered by the cross-cultural gap. Furthermore, the attribution of academic failure to a "lack of a positive self-image" suggests a possible misconception of the average Indian student's state of emotional maturity, and of its forms of expression. For example, Indian students often speak very softly, tend to avoid looking people directly in the eye; these traits perhaps indicative, among white students, of a lack of self-

confidence and of a poor self-image, are cultural customs to which even the most mature and self-confident Indian students subscribe.

This is not to argue that Indian students are either more or less mature than their non-Indian contemporaries; such a conclusion must await more detailed psycho-social analysis. It is necessary, however, to point out that there are more plausible explanations of low academic achievement, of which the most notable is inadequate instruction. The highest priority must be attached to correcting these impediments to educational success. It must also be noted that few social scientists who have observed Indian students in classrooms, playing fields, and dormitories can fail to observe their general cheerfulness, good nature, and dignity, none of which are indications of a "negative self-image." Perhaps what many teachers are saying indirectly is that many Indian students have a negative image of their teachers.

The typical Indian student, on the other hand, appears to have a sound and realistic view of what he wants and what he needs to reach his goals. He wants employment with opportunities for economic and social advancement, and he knows that academic achievement is an effective means to this end. The educational objective of highest priority is college preparation, followed by occupational preparation and advanced post-graduate professional education. The average student wants the reservations to be developed, and is sometimes also interested in integration with the dominant culture. He place a modest emphasis on school social life, and the lowest priority on "maturity" and a "positive self-image." He impresses the observer as, on the whole, mature, needing increased intellectual stimulation and improved instruction much more than emotional guidance.

These hypotheses tend to be supported by differences between students' and teachers' preferences in educational programs. Major disagreements occurred on the priorities accorded vocational training and field trips. The students felt that field trips were highly desirable, while the teachers placed an extremely low priority on them; students placed a low priority on vocational training, which teachers consider subordinate in importance only

to the recruitment of more teachers. In general, teachers believe in a quite obsolete form of occupational preparation, for which students show commendably little enthusiasm.

In summary, the students have educational objectives higher and more realistic, in terms of the usefulness in achieving economic and social success, than the objectives of most of their teachers. The attitudes and corresponding instructional activities of the majority of the teachers are, therefore, relatively ineffective in helping Indian students to achieve their educational objectives; there are, of course, many exceptions to this generalization. On the whole, however, teachers are unable either to instruct their students effectively or to communicate successfully with them potentially good teachers blame the immaturity or "poor self-image" of their students, rather than their own insensitivities and inappropriate training.

EDUCATIONAL PROCESSES

Administration

Administrative processes in the Education Division are hampered by all those problems normally associated with the structure and methods of the Federal Government. The men in positions of responsibility in the schools, agencies and areas are generally very competent in dealing with this system which is based on official reports, requisitions and authorizations. They spend much of their time doing paperwork, attending meetings, and entertaining visitors. In many cases, these demands, the lack of sensitivity toward children's human needs inherent in the system, the nine-month school year, and irregular hours limit the success of administrators' contact with their staff and students. Most administrators do not seem particularly disturbed by this situation. The systems analysts have concluded that administrators do not feel that they can alter these conditions; rather, they acquiesce to a system that they feel incapable of controlling. The reasons for this attitude can only be hypothesized: over the years, those Bureau principals who do not leave may come to identify with the organization for which they work, succumb to its frustrations and disappointments, and adopt a phlegmatic point of view toward the realities of the bureaucracy, so that they can cope with life in the Bureau of Indian Affairs.

One principal who has not been able to adapt himself has been termed "an incompetent administrator" by Central Office staff members. However, when the analysts visited his school, the principal's involvement with his students, and the excitement of the learning environment there, suggested that there are more important criteria of administrative success than punctuality in filing reports and in responding quickly to requests from higher echelons. Clearly, a combination of efficiency in transmitting information within the system and involvement with teachers and students would be ideal. Many of the administrators interviewed hold to this view, and expressed unhappiness and frustration with their inability to meet both these requirements.

These informal conclusions are based both on the impressions gained by Abt Associates' staff members and on the formal results of structured interviews. The formal investigation into the administrative process at the school level included interviews with 35 administrators at 21 schools and numerous comments on school administration by teachers and students. Interviews at the agency and area levels were informal in structure, and were intended simply to supplement the data collected by observation of the educational processs in the schools visited. From these investigations and from the data collected, a number of conclusions about the administrative process were reached.

The administrators interviewed displayed a generally high level of competence. Information on the 35 respondents included their origin, age, and levels of educational achievements and of experience in education; the data attests to their ample qualifications and maturity. Sixty-five percent are between the ages of forty and sixty, and another 9 percent are over sixty years old; 68 percent have an M. Ed. or higher degree; and 77 percent have more than ten years' experience in education. These statistics may not be altogether representative, as the sample included a disproportionately high number of administrators of large schools; and the administrators of smaller schools tend to have less experience and less academic preparation. Nonetheless, it is apparent that the administrators of Bureau schools compare favorably in their qualifications with those of public schools. It might, of course, be argued that young administrators, even with little experience, are preferable to older personnel. Research has failed, however, to establish any causal relationship between age and quality of educational leadership. In fact, one of the most vibrant and independent principals interviewed has been in the Bureau for well over 20 years and is past retirement age.

The administrators' frustration concerning certain of the demands on their time was apparent in their answers to questions about the actual and ideal allocation of their working hours. Respondents were asked to estimate the percentage of their time spent on various activities.

Most indicated that administration and the supervision of staff were their major activities; eleven stated that these activities took between fifty and eighty percent of their time. There was a definite correlation between the size of the school and the amount of time spent in purely administrative duties. At small schools, principals also teach, and therefore frequently meet with students, parents, and teachers. At the largest schools, the highest proportions of non-academic duties are necessary, to the extent that four superintendents and principals said that they almost never had contact with students.

When asked their major job concerns, the administrators replied variously. The most frequently mentioned concerns were reports, personnel, curricula, and finances. All of these, except perhaps curricula, involve extensive participation in just those official procedures of the Bureau that many administrators said hampered their freedom and scope of action. Even though almost every respondent expressed great satisfaction with his relations with the staffs of the agency and are offices, all felt constrained by the demands of the system. For example, when one field worker inquired about the procedure for hiring a replacement, twenty minutes were required to explain the process, forms, and built-in time limits. The necessary conclusion is that the replacement of an employee requires a minimum of one month, if no delays occur. Abt Associates' staff members observed the effects of these procedural requirements during a visit to a school. Although the third week of the fall term had begun, the school employed no bus drivers. Late in the summer, three drivers had been hired and approved, but their health certificates had not been returned by the Public Health Service. Technically, therefore, they were not yet employed. As a result, they sat idle while teachers, already overworked owing to a shortage of staff, drove the buses.

Cooperation between administrative levels in the Bureau seems to be satisfactory. Most schools reported that their relations with agency and area offices were very good. What criticism there was suggested that more support and advice is needed; the

initial hypothesis, that external financial control and responsibility for staffing create ill-feeling, was not substantiated. This does not mean, however, that the present organization is the most effective possible, but rather that few administrators are strongly opposed to it.

Some school administrators felt that the agencies were insufficiently staffed to provide adequate support; at the few agency offices visited by Abt Associates' staff members, however, the education specialists available seemed insufficiently utilized. The field analysis was not sufficiently extensive, in terms of school staff attitudes and observed staff activities, to be conclusive. It is suggested, however, that more systematic analysis and deployment of non-school education staff is probably desirable.

One other important problem of the administrative process requires mention because of its importance as perceived by school administrators. The fragmented, non-education-oriented functions of other BIA offices, such as plant management and purchasing, tend to impede many of the efforts at the school level. For example, Education Division personnel complained that the priorities on their requisitions and repair orders were assigned by persons not belonging to the Division. School administrators asserted that they should be allowed, and in fact encouraged, to determine the relative benefits of such expenditures, within the financial constraints imposed.

The effects of this administrative process on administrators were observed to take two major forms. Either the administrator becomes subdued by the system and does as well as he can under the circumstances, or a satisfied complacency sets in that allows the administrator to imagine unsatisfactory conditions to be in fact ideal. A very few people expressed extreme dissatisfaction with the limitations on their freedom of action, and were attempting in several ways to achieve a maximum of autonomy: teaching a class, participating in extra-curricular activities, initiating removals of incompetent staff members, using funds as freely as the law will allow, and others.

Abt Associates' findings indicate that although the existing structure has many serious faults, the average administrator has more freedom of action, in terms of innovation and re-organization of the school, than he is using. What is needed, then, is a two-fold effort, to improve the present administrative structure and to motivate the superintendents, principals, and education specialists to take better advantage of the opportunities open to them.

Classes

Formal findings of 147 classroom observations from nineteen schools (sixteen BIA, three public), were analyzed in depth and supplemented by informal conclusions of the Abt Associates researchers who visited the classes. The key consideration in the overall analysis of data gathered in the classrooms was pupil enthusiasm. Because the achievement data obtainable was uneven and compiled at different levels, pupil enthusiam was used as a proxy variable for pupil achievement. Comparisons between pupil enthusiasm and achievement appeared to correlate at the top and bottom of the scale. High achievement correlated with high enthusiasm, and obversely. However, there was no correlation in the middle ranges.

Pupil enthusiasm was determined a critical variable because it was assumed that higher achievement can be stimulated among more enthusiastic students than among less enthusiastic ones.

Data was collected with standardized observation instruments, and classes were rated individually as attentive, generally attentive or unattentive. Data for the various classes were then compiled by school, and schools were identified in four categories: those with highest and lowest proportions of attentive classes and those with highest and lowest proportions of combined attentive and generally attentive classes.

Eight schools were included in the two high categories; all of these were BIA schools, four of them high schools. Three had student bodies with mixed tribal representation.

Analysis of the data for each of these four subsamples identified classroom variables that seemed to have the most effect on the different levels of pupil enthusiasm (see the 6th Monthly Progress Report.)

Findings of the earlier analysis of data from schools in the Plains states were corroborated by the analysis of data for the entire school sample. As in the earlier analysis the two most important factors relative to pupil enthusiasm were richness (of activities, teacher behavior, teacher questions) and degree of responsibility placed on the student for (1) carrying out his own learning and (2) demonstrating what he has learned.

The issue of richness or variety is extremely critical in any classroom. It is particularly critical in cross-cultural education where a teacher of one culture is facing students from another culture. More often than not both teacher and student are mysteries to one another. Each knows very little about how the other thinks, about what is going on in the mind or minds of the other. Teacher and student are not responding in a systematic way to known needs and expectations of the other but rather in a hit or miss way to what each party can only guess are the needs and expectations of the other. The situation is essentially a testing one, and for this reason it is critical that the environment provide a variety of things to which each can respond and a variety of modes through which response can be made.

The schools which fell in the high pupil enthusiasm categories were schools in which this variety or richness was present. Teacher behavior in these schools was spread relatively evenly over the six general categories of teacher behavior (encouraging, presenting, assisting, analyzing, directing, discouraging) rather than falling disproportionately into one or two categories. Classroom activities were varied within classes and across classes; teachers asked a variety of kinds of questions (recognition, comprehension, demonstration of skill, analysis, etc.), and provided a number of different ways for students to respond to questions (designated individuals, mass response, etc.).

Among the variables appearing in the low pupil enthusiasm categories were poor mix of classroom activities and poor mix of teacher questions (the opposites of two of the most important variables in the high pupil enthusiasm category).

Two other significant variables in the low categories were high clear sense of direction in the class and high teacher presenting behavior. Neither of these variables are particularly negative in themselves; but in combination and in the context of other variables in this category they indicate an authoritarian style of teaching which allows students little freedom to explore subject matter and related concepts and skills in their own style.

The variables in this category relating to kinds of questions asked by the teacher were also significant: low demonstration of skill questions, low proportion of comprehension questions, low proportion of recall questions, and a high proportion of recognition questions. Low proportion of demonstration of skill and comprehension type questions indicate that the students are neither challenged to show what they can do or understand nor allowed much opportunity to do these things. High proportion of recognition questions implies that students are not pushed to try to understand or analyze problems or even to remember the correct pieces of information about problems; they simply have to recognize the correct answer from among alternatives given to them by the teacher or presented in the curriculum materials.

In short, the students in this category are in a relatively sterile learning environment in which there is limited amount of things to do or to respond to; they are given little freedom to explore the limited potential of this environment, and the intellectual demands the teacher makes on them are quite low. It is not surprising that they are neither attentive nor enthusiastic.

The second important factor relative to pupil enthusiasm was the degree of responsibility placed on the student for (1) carrying out his own learning and (2) performing or demonstrating what he has learned. This did not appear as a critical factor across all schools but appeared as a major consideration among the highest and lowest schools on the pupil enthusiasm scale.

The interaction of these two variables is extremely interesting. When students were charged with responsibility for both performing and

learning, student enthusiasm was high. When students had a great deal of responsibility for performing but none for carrying out their own learning, student enthusiasm was found to be extremely low. When students were given little responsibility for performing they were also unenthusiastic about, or uninvolved in, the learning processes.

As it turned out the high responsibility situations occurred in the richest learning environments, the low responsibility situations in the thinner learning environments. However, the data was not analyzed in such a way as to prove correlation between these two factors.

Added to this analysis of the classroom observation guides are a number of informal findings about classrooms in Indian schools. At first glance the Indian classrooms seemed to be much the same as typical classrooms any place in the United States. Subject matter, layout of classrooms, curriculum materials and learning aids all seem to be fairly standard. Teachers were talking about the same kinds of things in the same kinds of ways as teachers seem to talk anyplace.

What impressed the observer who glanced more than once was the atypical (relative to mainstream classrooms) student behavior, particularly among upper elementary and secondary school students from the more traditional tribes.

The students displayed an unusual lack of initiative--aggressive, questioning, outreaching behavior. Student initiative usually refers to an effort on the part of the student to assume some control of the learning process, to manipulate instructional resources (including the teacher) in the learning environment in such a way that he makes his own learning happen. When it is said of Indian students that they display a lack of initiative, it is implied that Indian students do not attempt to assume this kind of control.

Yet classes were observed in which it was clear that the students were in control of at least the social process in the classroom if not the learning one, classes where it was clear that the teacher was being manipulated by or somehow at the mercy of the students.

The stereotyped example of this situation is of a class of 25 kids

raising bedlam, talking, giggling, 'sassing back,' while a weak teacher flounders and is finally conquered through an extreme kind of student initiative.

However, in the Indian classrooms the same ends seem to be achieved through a different dynamic. The classes in which the teacher seemed to be most powerless were quiet; the students remained in their seats gazing at open books, the blackboard, or the teacher, who more often than not was not a weak personality. The class which provided the most striking example of this kind of student 'takeover' was taught by an experienced and, by typical standards, competent teacher; a warm, forceful man who loved his students and was in turn loved by them, as they demonstrated in their after school and playground relationship with him. Yet in the class he was bewilderingly--to the observer, to him, and perhaps to the students--helpless. This was not because the students misbehaved or showed any overt signs of disrespect, but because they appeared to show him nothing.

These two examples of undesirable classroom dynamics are contrasted because the ways in which middle class white students and traditional Indian students try to control or use a learning situation may be as different as the ways in which they appear to control a social one.

Two points need to be raised regarding this description of Indian student behavior:

1. This finding is not news to the BIA, the teachers, or the students. BIA representatives are the first to describe Indian students as being unaggressive, uncompetitive, shy. Students, when asked why they are so quiet and unresponsive in class, told us that, 'Everyone knows that Indian students are shy'. While everyone acknowledges these characteristics of student behavior as constraints on classroom process, no one seems ready to challenge them. In fact, everyone seems ready to accept them as given and unchangeable.
2. In describing the ways in which Indian students appear to <u>control</u> or manipulate social dynamics in the classroom neither of these terms is used in a pejorative sense. Neither is it implied that students achieve this control through deliberate or conscious efforts, or that they feel their

control over the social situation in the classroom is desirable. On the contrary the phenomenon seems to occur 'accidentally,' and the students seem bewildered and at a loss to know what's going on as the teacher.

What is disturbing then is what at first appeared to be reassuring: the apparent typicality of the Indian classroom, particularly the ordinariness of teacher behavior. The learning process is in large part a social one; student-teacher interaction is the focus of that process, and the teacher is a key figure in the interaction. It is not enough for a teacher to behave in typical ways or to respond to unusual atypical student behavior in terms of her notions of how typical students should behave.

The behaviorial characteristics of Indian students may be given and unchangeable, at least for the immediate future. The Bureau may be very realistic and even wise in accepting that. But that acceptance is a starting point, not a stopping one. Acknowledging unchangeable qualities in one half of the student / teacher equation should release energy and imagination to deal with the second half of the equation. Teacher behavior can be changed. Teachers can be and need to be trained to look for and anticipate meaningfulness in unexpected quarters of student behavior. Teachers can be trained to respond to unusual students with unusual sensitivity and to communicate with students through unordinary behavioral modes.

The BIA is beginning to train its teachers to develop new sensitivities and their efforts should be applauded and encouraged. Another effort which the Bureau is in a unique position to undertake is research into Indian social dynamics and decision making and learning modes. The results of this research would not only provide direction for ongoing training of Indian teachers but would make significant contributions to the development of cross-cultural education theory.

Dormitories

The BIA system of boarding schools and dormitories has been the target of repeated criticism. It has been alleged that the BIA boarding schools

-take small children against their will from their parents;
-present serious hazards to the mental health of pre-pubescent children;
-deny children a normal home life so that emotional and learning problems result;
-supervise students inadequately, so that drinking, theft, glue-sniffing, and other forms of misbehavior are common; and
-impose excessively severe dormitory rules and discipline, restrictive of the normal social development and recreation of the students.

Each of these charges is serious enough to warrant investigation. Even if untrue, they represent a serious deficiency in the public image of the BIA. The costs of this poor image, insufficient congressional appropriations, low morale, the alienation of potential applicants for teaching positions, and administrators explanations are heavy. To the extent that the allegations are true, they obviously indicate grave deficiencies of educational administration, imposing cruel and needless human costs on Indian children, and social and economic costs on the United States as a whole.

Three major policy questions face the BIA at this time:

1. Are the boarding schools an "irretrievable educational disaster" to be liquidated?
2. If the boarding schools are to be eliminated, what should replace them?
3. If the boarding schools are to be retained, how may they be improved?

A fourth possible question, that of improving the BIA image with regard to boarding schools, depends on the policy decisions made in response to the three questions just posed.

It is necessary to consider first the primary issue: are the boarding schools so deleterious, as has been alleged, that they should be eliminated? For the elimination of the boarding schools to be warranted, they must be inadequate in three major regards: unacceptability in terms of nationally sanctioned standards of education, housing, and child care; internal rigidity of administrative operations, personnel staffing, and

physical plant and equipment, causing corrective measures to be unlikely to suceed; and inefficiency, even if operated at acceptable standards, compared to other means of accomplishing their educational, social, and custodial objectives. In short, boarding schools should be replaced if they are unacceptable by current national standards, they cannot be improved to the level of available alternatives, and better alternatives exist.

The first problem to be investigated, then, is the acceptability of the present state of BIA boarding schools. (The quality of classroom instruction will not here be considered, as it is not the principal target of public criticism). While there is no universally accepted national standard for boarding school dormitories, norms may be postulated. The following is one set of possible criteria for measuring the acceptability of boarding schools:

1. Students should attend willingly, and with the consent of their parents;
2. Students' physical needs, for well-balanced foods, shelter, clothing, and medical care should be satisfied amply;
3. Students' social and emotional needs, for adult guidance, counseling, role models, and supervision, should be met at least as well as is common in good private boarding schools;
4. Students should be protected from the antisocial behavior of aberrant students, and should themselves be restrained from such behavior;
5. Students should be required to maintain orderly living quarters, to attend classes regularly, and to comply with appropriate school regulations;
6. Student intellectual and cultural development should be encouraged, facilitated, and exercised by informal and formal activities outside regular classes, such as a library, hobby clubs, film and musical presentations, and guest speakers; and
7. Student social development should be encouraged, facilitated, and exercised by formal and informal social activities, such as athletics, clubs, dances, and concerts.

Staff members of Abt Associates Inc. have visited twenty-three BIA boarding schools and five BIA dormitories in the last year: Choctaw Central, Wahpeton, Oglala Community, Cheyenne-Eagle Butte, Flandreau Indian, Concho, Chilocco, Fort Sill, Riverside, Sequoyah, Haskell Institute of American Indian Art (Santa Fe), Fort Wingate, Greasewood, Rock Point, Gallup (Manuelito) Dorm, Rough Rock, Tuba City, Santa Rosa, Phoenix Indian, Stewart Indian, Ramah Dorm, and Wrangell Institute. This sample includes schools in the South, the Great Plains, the Southwest, and Alaska. On the basis of these observations, it is possible to evaluate the validity of the allegations made about the boarding schools; it is recognized, of course, that the schools visited might not be representative of all BIA boarding schools.

No indications were found of the alleged unwillingness of children to attend the boarding schools, or of parental unwillingness to have their children attend these schools. Of the many children and parents interviewed, not one suggested that children were held in boarding schools against their will, or that of their parents.

On the contrary, there are strong indications that Indian adults favor the boarding schools. Numerous parents mentioned the benefits of boarding schools, based on their own experiences; both Mr. Raymond Nakai, Navaho Tribal Chairman and Mrs. Annie Wauneka, a Navaho Tribal Council Member, have expressed their belief in the continued need for Indian boarding schools. This is quite understandable, in light of the many practical benefits BIA boarding schools offer to Indian parents and children. In the environment of rural poverty which characterizes most Indian reservations, the BIA boarding schools offer better housing and food to the children than all but a few enjoy in their parents' homes. Parents and students alike seem aware of this benefit.

As the populations of most large reservations are thinly scattered over wide areas, large centralized boarding schools have been the only alternative to many small dispersed day schools. Owing to financial constraints, these small day schools have not been able to offer the variety of educational and extracurricular social services that the larger schools can make available to their students.

In summary, the allegation of student unwillingness to attend the BIA boarding schools appears to be more a projection of the hostile attitudes of some critics than an accurate reflection of the views of Indian children and parents. This is not one of the many aspects of BIA boarding schools fo which parents and children complain, although brief attempts to gain attention by "going AWOL" are frequent. This criterion of acceptability may, in most cases, be considered amply satisfied.

The criterion of adequate physical care of the students also seems to be met, although only qualified approval may be given to dormitory conditions. Food is generally nutritious, although tending to an excess of starches; like most institutional food, it is often poorly cooked and unappetizing. The starch-heavy diet is sufficiently supplemented by daily meat, fruit, vegetables, and milk to ensure healthy physical development. Clothing and medical care seem adequate.

Housing is generally safe and well-heated, but is often too crowded to permit quiet study. Abt Assoicates staff members also observed that while dormitories could never be considered grim, many tended to be dark, and savoring strongly of "government issue" in their decor. When lockers, and small cubicles, dressers, and desks are available for student use (and in two schools, students received none of these), each must be shared by two students. Only in a few, newer schools are smaller, sunny modern rooms available as living quarters; each of these is shared by two to four students. Most dormitories resemble Army barracks; their only furnishings are double-decker beds, in closely spaced rows, and steel lockers lining the walls.

Much could be done to make the dormitories more attractive and comfortable at very little cost in money or effort; most of this could be accomplished by the students themselves.

Both students and dormitory staff, however, told Abt Associates staff members that students are very shy when they first arrive at the boarding schools; this diffidence may inhibit them from individualizing their living quarters to make them more pleasant. The homes of many Indians in rural areas are, moreover, devoid of much furniture or decoration.

It is with regard to the criterion of acceptable adult guidance, counseling, and supervision in the dorms that there seems to be the most important need for reform. The most glaring deficiencies here are both of quality and quantity. The common ratio of one dormitory counselor to well over 100 children is unacceptable, especially in light of the generally low level of professional training of the dormitory staff and the youth of the elementary school children. A major improvement in the number and quality of dormitory personnel is essential to bring supervision, guidance, and counseling up to the standards even of mediocre private boarding schools. The case load of dormitory staff should be no more than twenty-five children; these staff members need not have college degrees, but should have had at least a year of professional training. These improvements would probably require a five-fold increase in expenditures on dormitory personnel. There do not seem to be any but budgetary constraints on this critically needed reform.

In the dormitories, theft, of which students frequently complain, and the anti-social and self-destructive behavior which is a major concern of parents and administrators, could be reduced greatly by more adequate staffing. It should be emphasized that stricter discipline is not a proper substitute for adequate staffing. In short, the criterion of student protection from anti-social or self-destructive behavior is not entirely satisfied in several boarding schools.

The criterion adequate maintenance of students' physical quarters seems abundantly satisfied, except for a failure to promote individualization. In fact, the dormitory staffs often seem to place excessive emphasis on this necessary but minor discipline, to the neglect of more important educational duties.

The criterion of encouragement, facilitation and exercise of student intellectual and cultural development is satisfied in too few BIA boarding schools. The dormitories often lack good books, records, and hobby shops; the ubiquitous television set is not an adequate substitute. On the other hand, some dormitories, notably at Rough Rock and Haskell, seem to be relatively well provided with books, records, and pictures, even if these

were not always the ones the students themsleves would select. The exercise of more imagination by dormitory staff could result in major improvements in this regard, at a modest cost.[1]

The criterion of student social development through a variety of activities is also only partly satisfied. While athletic programs are abundant and effective, social activities involving both sexes, such as plays, concerts, dances, and social clubs, are relatively infrequent. According to the students, even when they are held they are usually over-chaperoned and end very early. Many teen-age students also expressed great frustration with the boredom of weekends in the boarding school dormitories. Teachers and all but a few counselors depart, and almost no social activities are planned; it is hardly surprising, therefore, that students occasionally resort to drinking and glue-sniffing in order to relieve their boredom.

When seniors at one BIA boarding school were asked why they espressed so much interest in drugs, they responded that drugs "expand the mind." If stimulating social activities were planned for weekends, healthier ways to "expand the mind" might be found. (It should be noted that similar problems of boredom and its remedies exist in private boarding schools; to some extent, drinking and other misdemeanors may be attributed to the standard adolescent rebellion against authority. Middle-class children in prep schools are generally better able than Indian students to defend themselves, against the recriminations resulting from their misbehavior.)

Students complained bitterly of the lack of privacy in the dormitories, of the rigidity of their hours, and of the considerable attention devoted by dormitory staff to inspections and the enforcement of rules and order. At Haskell Institute, students reported that all electric power in the dormitories is turned off at night, to prevent them from reading or listening to the radio. Several students mentioned that they often needed flashlights to complete their reading assignments; they would hide be-

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[1] Fader, Hooked on Books (New York: Berkeley Publishing Corporation)

neath their blankets, so as to evade the notice of dormitory aides conducting bed checks. Students, particularly those who have already received their high school diplomas, are resentful of these regulations; understandably, they consider themselves too old to be treated as though they were children.

On balance, it appears that the physical accommodations provided by BIA boarding schools, while sometimes spartan, are acceptable, and are regarded as such both by Indian students and their parents. (Some visitors are concerned about over-crowding, but Indian parents and students, used to much more severe over-crowding in their own homes, rarely are.)

It is the social, emotional, cultural, and intellectual atmosphere of BIA boarding schools that must be considered unacceptable. It is difficult to predict whether these defects can be remedied, in light of the internal rigidity of the system with regard to administration, funding, and staffing. Until recently, little research into these prlblems had been conducted; administrators lacked, therefore, a clear basis for appropriate action. With the completion, however, of Abt Associates' System Analysis of Indian Education, there exists for the first time a sound basis for making effective decisions in this critical area.

Two questions as to the feasibility of improvements in the boarding schools present themselves immediately. It is necessary, in the first place, to determine whether school administrators would be willing to implement directives designed to change administrative policies and procedures. Secondly, it is essential to ascertain the likelihood of obtaining the additional funds which are needed, if the number of dormitory staff members is to be increased and their quality improved.

Teacher Recruitment

Present joint operation of the BIA Teacher Recruitment Office and the Civil Service Inter-Agency Board seem, at first, to be an improvement over earlier methods. However, several problems limit their success in providing enough of the very best teachers for the Bureau schools.

The Teacher Recruitment Office of the BIA and the Civil Service Inter-Agency Board (both located in Albuquerque) divide between them the responsibility for recruiting, rating and assigning teachers. The Board deals with high school teachers only, while the Recruiting Office (by authority delegated from the Civil Service) is concerned with elementary teachers and all guidance and dormitory personnel. Bureau high school teachers must have teaching skill in more than one subject (to fill vacancies left by a departing gym/math teacher, for example), and the complexity of filing and processing this complicated data explains the Board's more narrowly defined activitity. In the last year, approximately 200 high-school teachers were placed, and 536 elementary positions were filled by the two offices.

Though the consolidation of recruiting in these offices greatly reduces the difficulty of application for a potential recruit (who, under earlier recruiting by area, had to apply to each of the areas from which he wanted to choose), some doubts were expressed to the analysts about the wisdom of removing all recruiting duties from the area, which knows the needs and conditions of their own schools more intimately. Presently, one problem area seems to be the communication of staff needs from the area to the Recruiting Office. The information flow is circuitous because the Recruiting Office is not responsible to the Education Division but to the Administrative Division. This constitutes the major problem in the present recruiting structure. Education Division personnel complain that the Recruiting Office is unresponsive to Education's real needs and the Recruiting Office does as it sees fit, without any direct contact with the BIA schools. Initial contact between the system and most potential teachers is handled by six field recruiters, all of whom are former BIA teachers. They are each responsible for two geographically separated areas and travel a circuit of college placement offices. Some difficulty has been experienced in the past by recruiters trying to arrange their first visit to a new college. This is attributable to the Bureau's hazy, or even negative, public image which results from a haphazard public information program. Compared to the publicity given efforts against poverty and discrimination, the Bureau's relative silence implies to many teachers (as well as to the general public and its legislators) that the problems are minor or that major problems are being suppressed. Either impression is unlikely to attract the socially-conscious teachers needed.

Once invited to visit a college, the recruiter makes a slide presentation which shows living conditions on reservations, and which emphasizes primarily the scenic and isolated aspects of the Bureau's work. The rationale for this is the necessity to change all future teachers' ideas about modern Indian life, and to reduce the shock prospective teachers might feel when considering a job at one of the Bureau's more desolate locations. Students who are interested apply through their placement offices for a twenty-five minute interview with the recruiter.

The 25% of the recruits who are not hired directly out of college are not secured by any well-planned strategy. Once again, the Bureau's lack of a coherent and sophisticated program for communicating its goals, its needs and its challenges to the general public militates against its getting the best teachers. Some small ads in teacher-oriented magazines are the only media presentation of the education department. Reasons given for this are vague and seem to center around a desire not to appear aggressive, as do some other Federal teacher recruiting programs. Fears of being accused of unethical proselytizing among teachers are voiced, but this would certainly not preclude a general public information campaign which would also reach experienced teachers whether or not they were teaching at the moment. Most out-of-college teachers who contact the Bureau do so because they remember the recruiter's presentation at their school or they hear about the recruiter's visit from students working with them as practice teachers. A few others witness BIA presentations at summer workshops.

The head of the recruitment office feels it is essential that recruiters be experienced Bureau teachers. He is proud that most of his recruiters can answer students' questions from their own experience in the field. It is questionable, however, whether a teacher-recruiter who worked in only one or two schools can answer a broad variety of questions about other areas. Teaching experience may not be the only way for a recruiter to develop the personal background from which to describe the challenges of teaching in the BIA schools.

The required qualities in a recruit which will make him a successful teacher within the Bureau are quite vague, and tend to be expressed only in general terms. The recruiters are said to look for the following qualities:

Good training and background
Ability to identify the needs of others
Inventiveness in problem-solving
Willingness to work hard
Warmth

Of these the last is considered the most important.

Much of their dependence on imponderable qualities is directly related to the unfavorable pay arrangements which weaken the Bureau's bidding for the very best talent. The recruiters are forced to seek out that portion of the teacher labor supply which is motivated by selflessness. The director of recruiting estimates the proportion of suitably-motivated student teachers to be about 2% of the yearly graduates.

The results of direct interviews between potential teachers and recruiters are communicated in two forms to the central processing offices in Albuquerque. Each college student requesting one is given a packet of application forms which includes both standard Civil Service forms and special forms for the Bureau system. The recruiter-interviewer also transmits his evaluation of the applicant's requirements for teaching in the system. This information is the basis of rating by the Recruitment Office, which in turn influences the applicant's pay scale if he is hired.

Rating of working teachers is done on the basis of references and recommendations from former supervisors; only very promising, experienced teachers who are being considered for the highest starting salary level (GS9) are interviewed by field recruiters. Teachers for secondary schools are filed by the Inter-Agency Board as to combination of skills, and are only rated when a definite opening occurs.

Though each of the recruiters is counted a qualified rater, he rates only those he interviews; final rating on the basis of interviewer's comments, application contents, and references is left to one of two

raters at the Recruiting Office. Due in part to the Civil Service prohibition against personality testing, rating is done at this considerable distance from the actual applicant by persons who have not met him, and who are admittedly trying to judge non-quantifiable factors with strictly objective information. There are not even extended essay questions to allow the applicant to express his own feelings.

Salary is a major deciding factor in most teachers' career choices. In this area the Bureau does not compete well, although its annual salaries are neither extremely high nor low, and Civil Service positions do have a unique degree of security. The Bureau teacher's salary is paid over a full twelve months, (as per Civil Service regulation) as opposed to the nine-month year of most public systems. This means that monthly income is considerably lower, and the Bureau teacher is not free in the summer to supplement his income with a short-term job, as many other teachers do.

If an applicant is accepted, he is notified of his assignment to a particular school, with some consideration being given to his regional preferences. He is also asked to arrive a week early (two weeks if assigned to the Navajo reservation) for an indoctrination and familiarizing program. Most new teachers start at Civil Service pay rate GS7 and are on probation for their first year. Teachers may be dismissed during their probation period without appeal. If their work is satisfactory, about 50% are elevated to grade GS9 at the beginning of their second year. Later jumps in grade must be initiated by the teachers themselves. Alaska is considered a hardship post with an attendant salary increase.

A teacher who seeks transfer to another Bureau school can only do so through his local area personnel office; only those requesting transfer after four years in Alaska may use the Recruiting Office's services to locate a new post.

Unlike most teachers in public systems, Bureau teachers are free to leave at any time with only two weeks' notice, in accordance with standard Federal employment practice, and no binding contract may be entered into between the Bureau and its employees. This may be attractive from the viewpoint of the teacher, but it creates sudden last-minute

demands to replace new teachers who quit shortly after the beginning of the fall term, or who stay on only from September to September in order to get reimbursed for their moving expenses, as is government policy.

The new teacher's arrival at his first post is also an example of the Bureau's failure to match the services offered to professionals by public and private employers. The head of the Inter-Agency Board stated that he did not think it appropriate that a new teacher arriving at his area office with a carload of baggage and family at 4:30 p.m. should be sent away until the office reopens the next morning. Yet no one is assigned the role of helping new arrivals in most offices.

The indoctrination week which the new teacher undergoes seems to be poorly organized as a means of preparing the teacher for the Indian culture with which he will have to deal. Also, many of the tribes are pushing for some authority in teacher selection and training. However, the Civil Service is probably not authorized to delegate the selection authority further than it already has (to the BIA Teacher Recruitment Office).

Much of the difficulty experienced by the Bureau in obtaining the kind of teachers it seeks is its inadequate understanding of just what attributes make a successful teacher in a cross-cultural situation. Presently, the only feedback of teacher performance to the Recruiting Offices comes from visits by recruiters to recently-recruited teachers in their first year of service. This is not sufficient data from which to profile the characteristics of successful teachers. This is reflected in the statement by the director of the Recruiting Office that the most useful data a more effective Bureau Data Center might give him would be reasons for teacher resignation/dismissal and a correlation of teacher-performance data with academic background. The goal in both cases would be to fill some of the gaps in the Office's ignorance about what detectable qualities in applicants seem related to later effectiveness as a teacher in Bureau schools. The director of the Inter-Agency Board also feels that present feedback and teacher evaluation information flow

is useless, and that the present Data Center is not helpful. Some form of recording the impressions of teachers retiring or otherwise leaving the system is required.

Furthermore, the efficiency of the education department's middle-level supervisory personnel was questioned, and was cited as an impediment to the feedback of information to the recruiters.

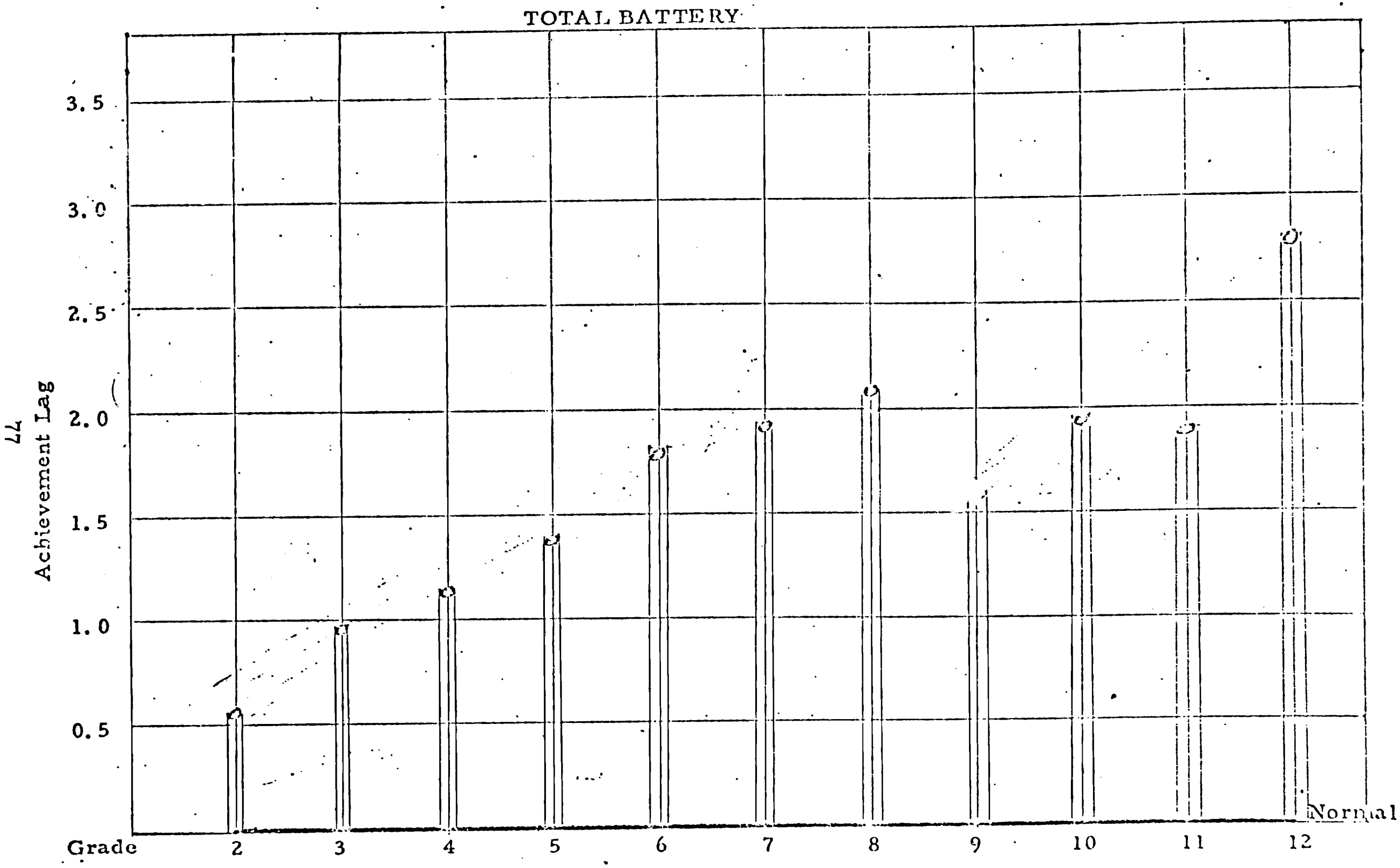
RESULTS

There is some concern that the educational processes discussed above fail to achieve the educational and economic objectives agreed upon by educators, employers and Indians. To a large extent, this is due to the complexity and magnitude of problems created by the cross-cultural situation and to the budgetary constraints imposed by Congressional appropriations for the BIA. It is also due, in part, to the failure of the system to use its current resources in the most efficient manner. The educational problems, created by these factors, and demonstrated by the school and post-school performance and achievements of Indians testifies to the urgent need for change in both resources and their use.

Abt Assoicates' research indicates deficiencies in both intellectual and emotional development in the schools. Many of the teachers and administrators interviewed mentioned discipline problems as a major concern. Fighting, drunkenness, sniffing glue and truancy were mentioned as the primary social deviations. Chart #1 shows similar deficiencies in the academic and cognitive development of Indian youth. Achievement test scores for Indian students lag progressively farther behind national averages from the second through the eighth grade. The sudden rise in achievement scores, which drops the curve significantly between the eighth and ninth grades (by nearly a full grade-level) suggests that poorer students drop out before entering high school.

The dropout problem, another area of serious concern, was analyzed and compared to national norms. The only available data including retention rates for all fifty states were taken from the National Education Association's publication, "Rankings of the States, 1968" (Research Report 1968-R1). In Table 49, 1966-67 public high school graduates in each state were expressed as a percent of ninth graders in 1963. In applying this analysis to BIA schools, it was discovered that the retention rate for the same class was 98.8 percent (see Appendix I), compared to the highest state retention rate

ACHIEVEMENT LAG BEHIND NATIONAL NORMS OF ABOUT 22,000 INDIAN PUPILS IN BIA SCHOOLS[1]



[1]Includes 3400 high school pupils excluding results for grades 10 and 12 in the Aberdeen Area. The higher achievement level in that area has caused the irregularity of the high school achievement curve.

of 92 percent.

More students graduated from the preceding class (1966) than had been enrolled in the ninth grade in 1963! However, field observations and annual attendance records indicate that BIA schools have many more dropouts than other systems. This disagreement is explained by the fact that BIA schools accept a large number of upper-grade transfer students who do not get along well in public high schools. The Phoenix, Flandreau and Chilocco schools are examples which enroll large numbers of transfer students.

Another approach was tried in an attempt to determine the BIA schools' retention rate. The summary of dropouts and expulsions for 1966-67 (see Chart I), based on the 1967 annual school attendance reports, was used to project the retention rate. Using the 1966-67 ninth grade population and the percent who left school that year in grades nine, ten, eleven and twelve, a projection was made of the percent that would graduate. If these departure rates remain constant until 1970, only 60.3 percent of the students enrolled in the ninth grade in 1967 will graduate. Comparing this to the 1967 national public school graduation average of 77.8 percent of the 1963 ninth grade enrollment and the lowest state 1967 retention rate of 64.9 percent (Georgia), a more realistic relationship is evident (see Chart II).

The comparison between these two rates is valid if 1966-67 BIA pupil departure rates are indicative of a normal year's dropout and expulsion ratios. Empirical data collected by Abt Associates indicates that this is the normal pattern; the most dropouts occur in grade nine and the least in grade twelve. It follows that the one-year figures for BIA schools are a true indication of where the Bureau students stand with respect to the public school population.

If an Indian student does graduate from high school his chances of success in college or a career are still severely limited. Although the actual college enrollment of Indian students has doubled within the last ten years, it still remains well below that of other groups in

CHART I

Summary of Dropouts and Expulsions

School Year 1966-1967

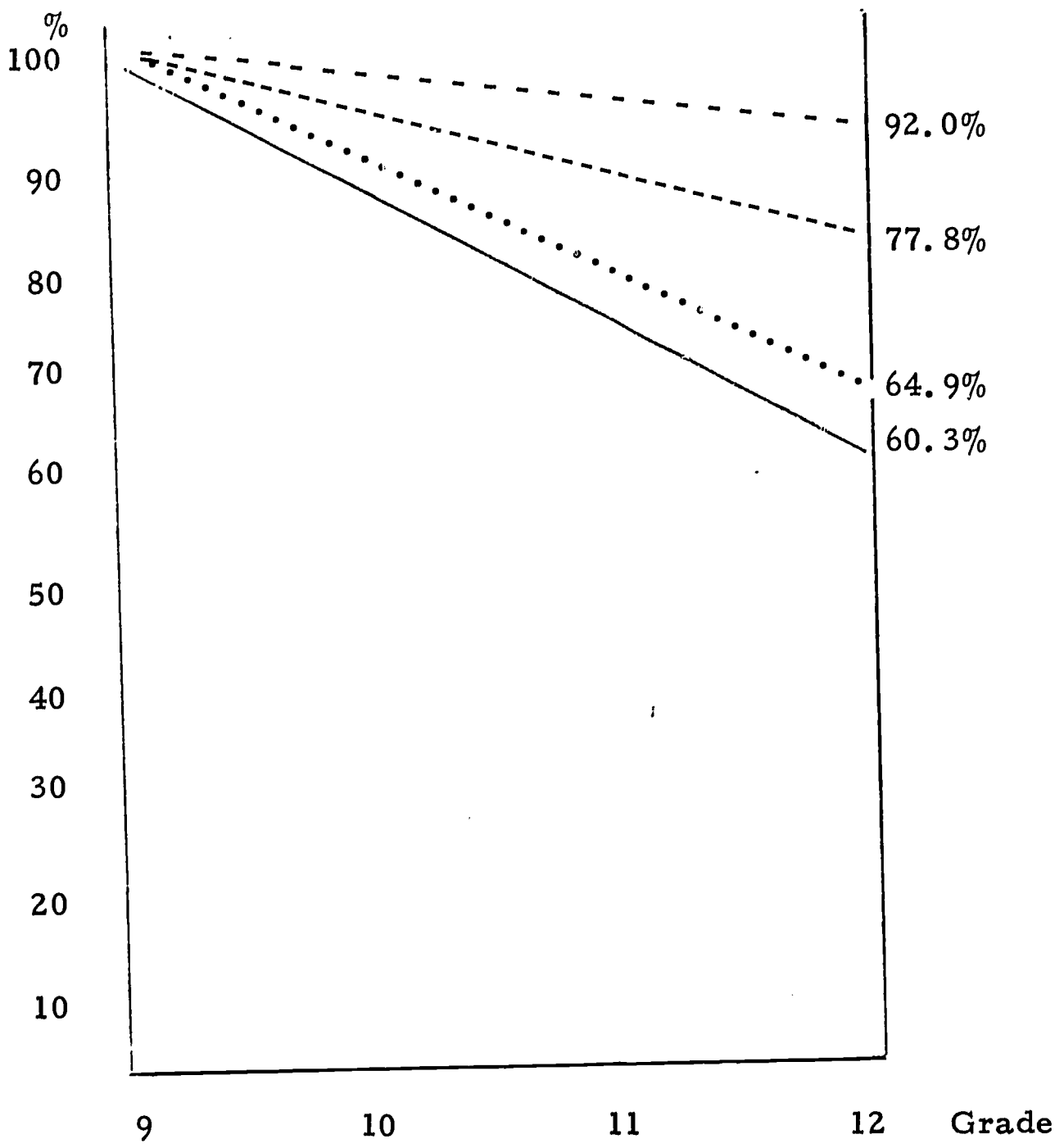
Grade	Enrollment by Grade	Dropouts & Expulsions by Grade	Percent of Dropouts & Expulsions
Beginners	4,427	53	1.2
First	5,535	74	1.3
Second	4,834	41	.8
Third	4,405	53	1.2
Fourth	4,188	54	1.8
Fifth	3,780	81	2.8
Sixth	3,474	89	2.6
Seventh	3,054	35	4.4
Eighth	2,817	63	5.8
Ungraded Elementary	1,736	83	4.8
Sub-Total Elementary	38,250	826	2.2
Ninth	3,532	464	13.1
Tenth	2,988	370	12.4
Eleventh	2,723	341	12.5
Twelfth	2,357	230	9.8
Ungraded Secondary	53	13	24.5
Sub-Total Secondary	11,653	1,418	12.2
Thirteenth	853	159	13.6
Fourteenth	443	121	27.3
Sub-Total Post High	1,296	280	21.6
GRAND TOTAL	51,199	2,524	4.9

Recap:	2,524	
Regular	2,148	4.5
Special		
Ungraded	96	5.4
Post High	280	21.6

Source: 1967 Annual School Attendance Reports
10/30/67

CHART II

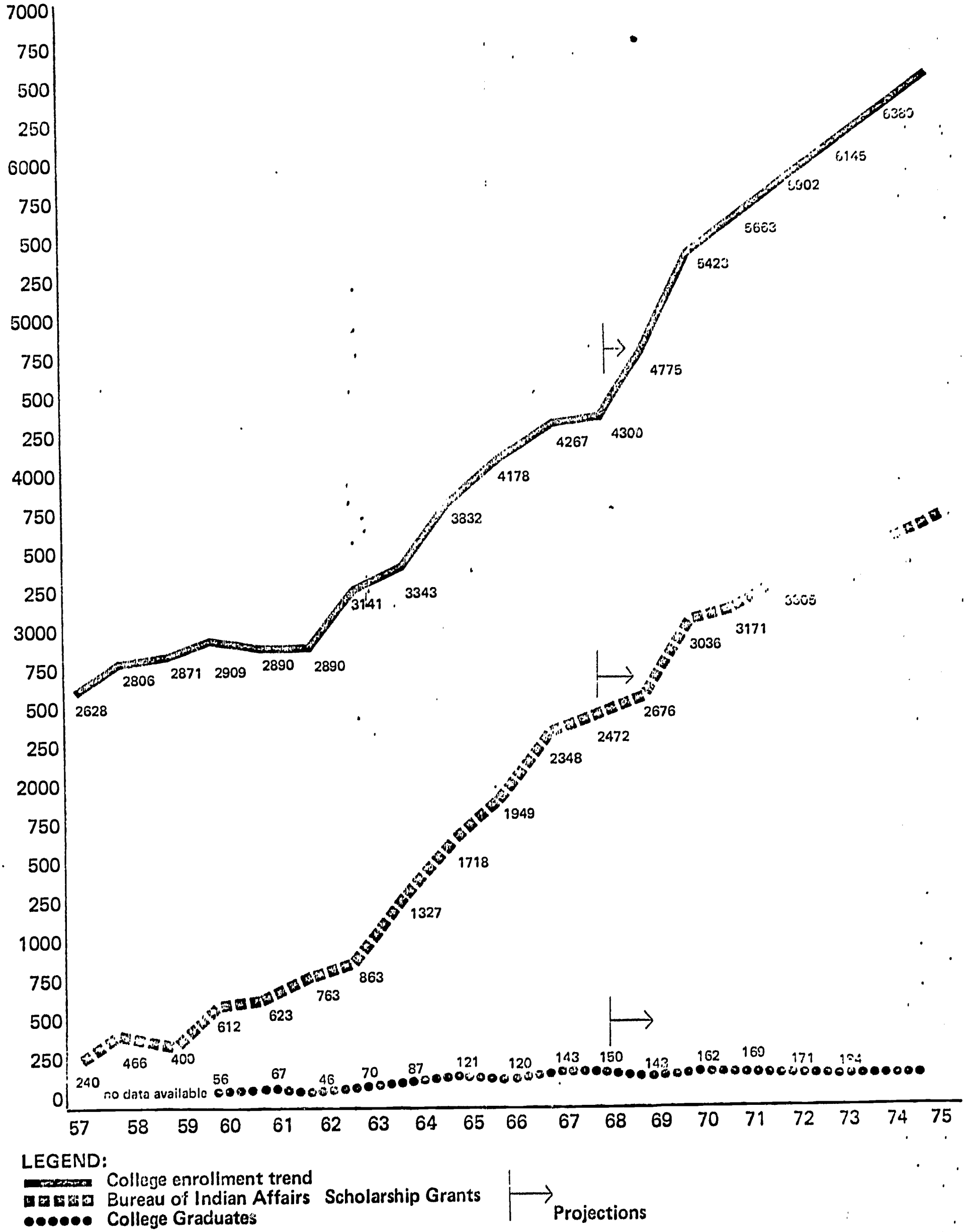
Percentage of Ninth Grade Enrollment That Graduates From High School



LEGEND:

---------- (1966-67)	National Average
———— (1969-70 projected)	BIA Schools
.....	Georgia (poorest state average)
- - - - - - - - (1966-67)	Minnesota (best state average)

INDIAN COLLEGE ENROLLMENT



the United States. In addition the dropout rate has increased in this decade (see Chart III).

In 1968, 4,400[1] Indian students were enrolled in colleges. 2,472[2] of them were receiving Federal Scholarship assistance. From information on college enrollment and college entrance rates, Abt Associates, Inc. found that only three percent of the Indians who enter college actually graduate. This compares very unfavorably with the national college graduation rate of 31.9 percent[3], and predicts that only about 150 Indians will receive bachelor's degrees in 1969. Furthermore, there is no reason to believe that this situation will improve if drastic changes do not occur.

If an Indian youth does manage to stay in school through the tedium of school and personal crises of his life, his training is not nearly as valuable for him as for his white peers. As explained below, expected annual earnings for whites increase by more than $3,500 if an individual goes to college as opposed to only finishing eighth grade. An Indian's annual salary will only increase by about $1,600 a year if he continues on to college. Education, then, is not as sound an investment for an Indian as it is for the rest of the population.

Haskell Institute has published a calendar that shows the job placement and salaries of all of its graduates. Abt Associates, Inc. found no other Bureau school that keeps as accurate a record of where its graduates go. The difficulty of following graduates for many years has made it nearly impossible to determine what happens to those who go to college, find jobs, or relocate right after graduation. The subjective analysis is that many young Indians who go to work immediately after school become disillusioned, frightened and frustrated living away from the sanctity of the reservation or a Bureau school, usually in a city. The result is a deterioration in their attitudes toward white society and the demands of their jobs. They either return home, where there are not enough jobs, or they get into trouble. In either case, education has neither prepared most Indians for fruitful employment nor helped them achieve

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[1] Education Division, Bureau of Indian Affairs (Letter)
[2] Ibid.
[3] Statistical Abstract of the U.S.

personal goals.

The failure of Indian young people who have remained in school indicates that the BIA schools do not provide adequate instruction to deal with the conflicts created by their cultural and socio-economic environment. The incidences of deviation from social norms, the drop-out rate, the low number of college graduates and the erratic employment patterns of many graduates all attest to the ineffectiveness of the system as it is. Special educational needs, in addition to those caused by rapid Indian population increase, must be satisfied if Indians and their communities are to become more self-sufficient and secure in the next decade.

PROJECTED ENROLLMENT FOR THE BIA SCHOOL SYSTEM UNTIL 1980

The Problem

In any educational system accurate planning for the future requires accurate predictions of future needs. The BIA has and makes substantial investments in school buildings and school staff. If these future investments are to be made wisely, predictions are needed of the number of students that will be enrolled in the future and the number of extra classrooms and teachers that will be required for these additional students. Since school buildings take considerable time to plan and to construct, the planning for new schools must be done ahead of actual need. Funds, also, must be obtained ahead of time.

A simple example will show the consequences of planning on the basis of accurate information. We have made various estimates of future Indian student enrollment which will be described below, but one estimate shows that there may be 31,000 additional students by 1980 in BIA schools. If school buildings are to be constructed for these additional students, the cost will be about $31,000,000 if the cost is computed at $1000 per pupil. However, another projection, predicts that the actual increase will only be 14,000 students which would entail an investment in additional buildings of only $14,000,000. If planning was based on the first estimate but the actual increase corresponded to the second estimate, the BIA would have overinvested in educational buildings by $28,000,000, which would have been a serious misallocation of resources. Conversely, the BIA might plan their expenditures on the basis of the second, lower estimate although the higher estimate was correct. In this case, students would be enrolled without classrooms to receive them, again a serious planning error.

The more accurately the BIA can predict future educational needs the more wisely it will be able to allocate the appropriate funds. Currently the BIA is doing very little in the way of long-range projections of school building, enrollment and teacher needs. Projections that are made are not done with the best techniques that are available.

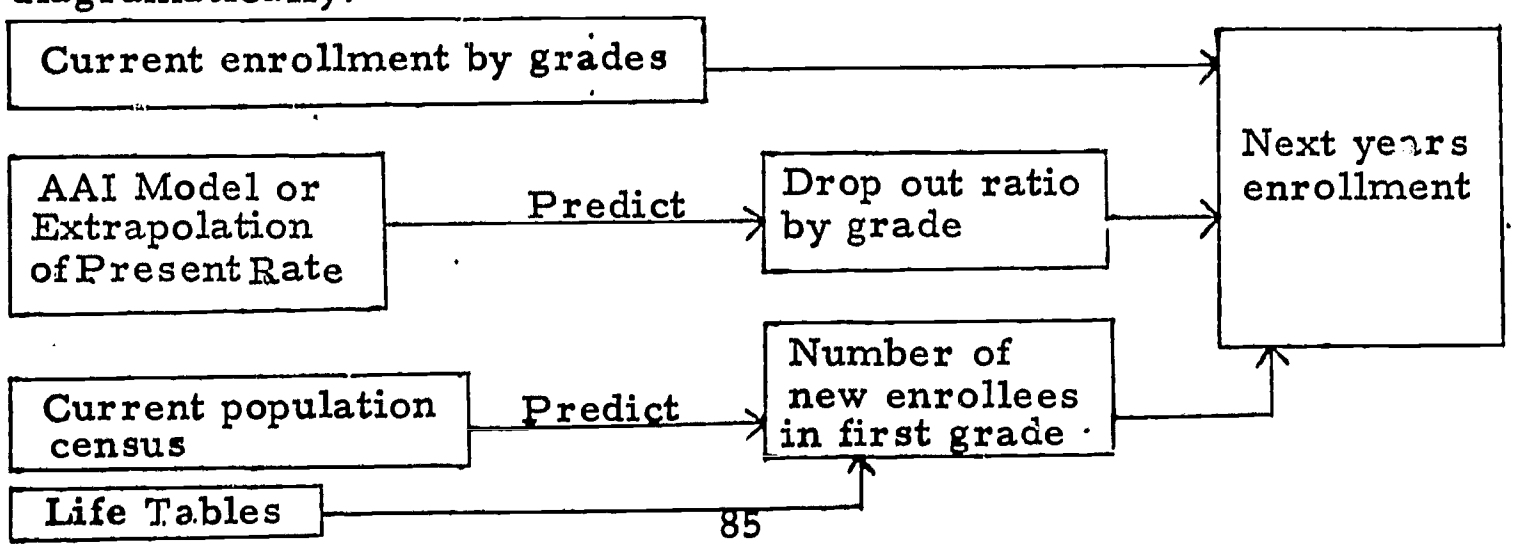
This section will show how better projections can be made and describe some projections that Abt Associates Inc. has made. Although necessary data was not always available, these represent, to our knowledge, the first systematic attempt to project future educational needs of BIA schools, and will give the reader a reasonable idea of the range within which future educational needs can be expected to fall.

Methods which can be used to forecast future educational needs will be discussed first , followed by actual forecasts that Abt Associates Inc. has made of future population and enrollment. Then, using this data, a few estimates will be made of the future educational needs of the BIA School System with respect to buildings and teachers. This analysis will concentrate on methods for predicting future school enrollment. If this is accomplished, it will not be too difficult to forecast needs for teachers and buildings.

Methods for Projecting School Enrollment

There are two possible approaches to the problem. The choice of method depends on how far into the future projections need to be made. If school enrollment one year hence is desired, the obvious method is to use current enrollment data. The only further information required is data on the expected enrollment in first grade.

Enrollment in all the other grades can be forecast using current enrollment data and the number of drop outs to be expected in each grade. Such a technique is called cohort analysis. The data on enrollment in first grade can be readily obtained from a current population census (if one exists), by simply looking at the number of children that will be of school age next year after allowance has been made for mortality, (i.e. - using simple life tables). This approach is presented below diagramatically.



It is necessary first to design a model to predict future drop-out rates from current data. Such a model has been developed by Abt Associates Inc., and can be conveniently used for the purpose.

This procedure will give accurate results as long as there is no net change or emigration of population. If accurate census data exist, the number of new enrollees can be predicted. Changes in fertility or birth rates are not critical as long as we forecast only five years ahead, because a change in birth rates now will not affect first grade enrollment for five years. Predicting beyond five years requires the use of demographic techniques to project total future population.

Demographic Projections

A detailed mathematical demographic model has been developed and is explained in the section on school enrollment models. Briefly, this model relates mortality, fertility, migration and the existing age structure of the population to each other to predict future population. These predictions can be made any number of years into the future, although the accuracy natually decreases with further projections. The method is more flexible than the cohort analysis discussed previously because long-range forecasts can be made.

Although the mathematical model is fairly complex, the output can be only as accurate as the input data. The principal input data are birth rates, death rates and net migration rates. Both current and future rates are required.

In the case of the Indian population, obtaining data on future birth, death and migration rates is difficult because the population is in the midst of far-reaching demographic changes. Because of intensive public health measures over the last twenty years, the Indian death rate and infant mortality rate have declined precipitously. Also, birth rates have been changing in ways hard to predict. They have tended to increase over the last decade, but now appear to be stable or even declining due to family planning and increased education. Furthermore, migration rates in and out of reservations play an important role in determining

total population, but are difficult to forecast and measure.

Migration rates are a complicated function of education, income and economic development, on which there has been very little study and analysis for the Indian population. Increasing education tends to promote emigration from the reservations to locations where better jobs are available for trained applicants. Better education, however, also tends to promote economic development on the reservation, which tends to reduce emigration. The net effect of education is, therefore, uncertain and dependent on the relative impact of opposed effects. This illustrates the problems that have to be solved in forecasting some of the variables determining future population.

Similarly, a large number of factors affect birth rates in subtle and complex ways. Some of these factors are cultural: the level of education, level of income, family planning practices and availability of family planning methods. Projecting future fertility is particularly difficult and has traditionally vexed demographers. The U.S. Census makes not one, but four, separate projections of future U.S. population. The only difference in these projections involves different estimates of future fertility rates. The differences between the projections are considerable. For example, the Series A projection syas that the U.S. population in 1990 will be 300,000,000 while the Series D estimate is 255,000,000, the difference being entirely due to differing estimates of fertility.

No projection of Indian population growth can be made with absolute accuracy, therefore; demographic analysis is nonetheless a far more reliable means of estimating growth rates than any other method. Furthermore, Indian reservations exhibit wide differences in fertility and migration rates. At least four representative examples can be distinguished:

	High Net Outmigration	Low Net Outmigration
High Fertility	Type A: Stable Population	B: High Pop. Increase
Low Fertility	Type C: Declining Population	D: Stable Population

These four types of reservations could have rapidly increasing populations, stable populations or declining populations. Projections made for each of the four types would encompass the diversity of reservations and would yield superior results as compared with using averages for all reservations. For this purpose, all reservations must be categorized in one of these four types. Much better basic demographic information for actual birth and death rates and migration rates is required in addition to the principal factors leading to changes in these rates.

Ideally, separate projections should be made for each reservation. However, in the projections that are made in the next section, averages have been used to work within available resources.

Projections to 1980 of Indian Population

Using a modified form of the enrollment model and average birth, death and migration rates based on Census and Public Health Service data, two projections for the entire Indian population to 1980 have been made. One is a high estimate and one is a low estimate.

	1965	1970	1975	1980	% Increase
HIGH ESTIMATE:	640,000	750,000	880,000	1,040,000	64
LOW ESTIMATE:	640,000	704,000	768,000	857,600	34

The higher estimate is based on the assumption that fertility will not decline and that there will be no net emigration. This yields an extremely high rate of population growth of 3.3% per annum, which is the present rate at which the Indian population is growing. This is three times the natural rate of increase for the U.S. population at large and is a simple consequence of very high fertility rates and a relatively low (and still declining) death rate. The Indian population has not always grown at this rate because only in the last fifteen years has the Public Health Service dramatically improved the health of the Indian population while fertility has remained stable or increased. The Indian population at present is growing very rapidly and, if the present rate of growth continues, the population will double in twenty-one years. The high estimate assumes

that the birth rate will not decline in the next fifteen years and that there will be no significant emigration. If these assumptions are valid our projection will be accurate. At all events, the high projection represents the practical upper limit to which Indian population can grow.

The low estimate assumes a net population growth rate of two percent per year which will mean that the population will double in thirty-five years. The assumption behind this prediction is that fertility will decline by twenty percent and that net emigration will be one percent. A twenty percent decline in fertility is possible if family planning services are extended to the bulk of the Indian population and education and incomes increase. Since increases in education levels and incomes are highly dependent on the amount of funds allocated by the Federal government, and since this is unpredictable, it is impossible to know what will actually occur. Policy makers should be aware that economic and educational progress will decrease the rapid current population growth, and that this demographic change can be fostered by governmental policy decisions.

School Enrollment:

On the basis of these estimates actual school enrollment can be calculated. The assumption that the relative proportions of students in BIA, Public and Mission Schools that occurred in 1965 will remain constant through 1980 is dependent upon BIA policy in the future regarding its own schools.

Using projections for the high rate of increase, yields the information contained in Tables B, C, D.

SCHOOL ENROLLMENT USING HIGH POPULATION PROJECTION

Table B

Year	Public Schools 6-18	BIA Schools 6-18
1965	115,000	43,000
1970	126,000	47,000
1975	154,000	54,000
1980	182,000	74,000

The total enrollment increase in BIA schools will thus be as follows:

Table C

Increase in BIA School Enrollment

Period	Number of Students
1965-70	4,000
1970-75	12,000
1975-80	15,000
Total	31,000

Table D

Increase in Public School Enrollment

Period	Number of Students
1965-70	11,000
1970-75	28,000
1975-80	28,000
Total	67,000

Thus, total enrollment in both BIA and public schools will increase by 98,000 students by 1980, assuming that the retention rate remains constant and the population growth of 3 percent actually occurs.

Not all the increase will take place in BIA Schools or Public Schools funded under the Johnson-O'Malley Act, but the basic rate of increase of 64 percent is the important figure to keep in mind.

For the low population estimate, the increase in the school population will be 34 percent. The tables below show the resulting increase in the school population.

SCHOOL ENROLLMENT USING
LOW POPULATION PROJECTION

Table E

Year	Public Schools 6-18	BIA Schools 6-18
1965	115,000	43,000
1970	122,000	46,000
1975	138,000	51,000
1980	154,000	57,000

Table F

Increase in BIA School Enrollment

Period	Number of Students
1965-70	3,000
1970-75	5,000
1975-80	6,000
Total	14,000

Table G

Increase in Public School Enrollment

Period	Number of Students
1965-70	7,000
1970-75	16,000
1975-80	16,000
Total	39,000

Thus, total enrollment will increase by 53,000 students by 1980, using our low population estimate.

Projections of School Facility and Teacher Requirements

Using these two sets of projections, the total increase in school buildings and teachers that will be required for the BIA can be determined on an aggregate basis. These projections assume that the student retention rate will not change. If it does increase, and the pupil classroom rate decreases, these estimates will require upward revision.

School Facilities:

If one classroom served twenty-five students, the necessary increase in the number of classrooms by 1980 will be:

	Increase in Pupils	Pupils Per Classroom	Increase in Classrooms
High Estimate	31,000	25	1,250
Low Estimate	14,000	25	560

Teachers:

Assuming a 25:1 pupil/teacher ratio, the increase in teachers to 1980 for BIA schools will be:

	Teachers
High Estimate	1,250
Low Estimate	560

Conclusions

1. In view of the magnitude of the expenditures made for Indian education, insufficient resources are being devoted to making long-range forecasts of future enrollment and of future school facility teacher needs. Some attention is being given to short-run forecasting (i. e., up to five years in the future).

2. Both long and short-run forecasting of future enrollment is worthwhile and can be expected to materially improve investment expenditures in education.

3. Short-run forecasting (up to five years) is both more accurate and easier to perform than long-run forecasting and the first priority for the BIA is to make such detailed short-run forecasts for every reservation.

4. Long-run forecasting is difficult; and this is especially so when dealing with a diversity of reservations and demographic patterns on which negligible research has been done. Considerable demographic study of the basic factors affecting population change, especially migration and fertility, is needed. Long-run projections have the peculiarity of being partially dependent upon governmental policy and expenditures on education and economic development. Future population projections have, therefore, to consider the effects of a variety of policies on any projections that are made. A modest start can be made on long-run demographic projections. This should be done for each reservation demographic type. Ultimately a Research Institute for the Study of Indian Demography ought to be established which could be jointly funded and directed by the BIA, Bureau of the Census and the Public Health Service. Information from such an institute would be invaluable not only for educational planning, but for the planning of economic development and public health services.

5. Indian school enrollment is expected to double in twenty-one to thirty-six years. It would be very instructive to know which is the more likely estimate, but the answer is conditional upon better demographic information. At all events, Indian school population has been and will continue to grow

at an explosive rate, which should be of considerable concern to education planners. The key to obtaining a rate of growth more in harmony with the resources of the reservation lies in improving education and economic prosperity.

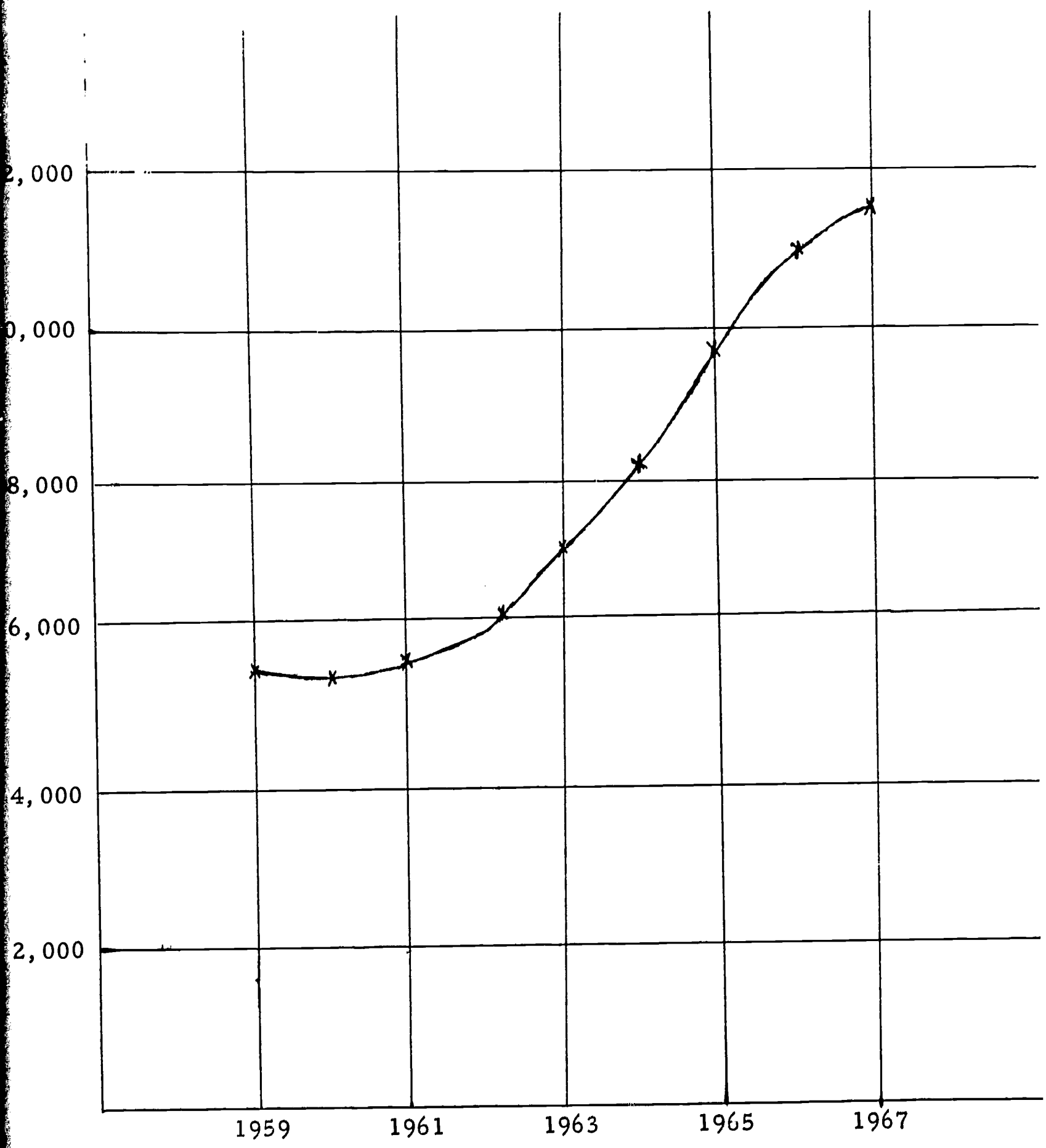
Appendix: A. Past Enrollment Trends

School enrollment trends for a few selected groups are presented below to provide the reader with a feeling for best trends. The rates of increase of the high projection are comparable to the rates for the last decade.

The enrollment figures below show a fast rate of increase from 1955 to 1966. The basis on which the statistics were collected changed in 1960 to 1966 was from 63,000 to 86,000, on the smaller base, an increase of 38 percent for six years. On a fifteen-year basis, this amounts to a 95 percent increase. Since the percentage enrollment did not significantly change in the period 1960 to 1966, the increase is due mainly to natural increase in population.

Chart IV

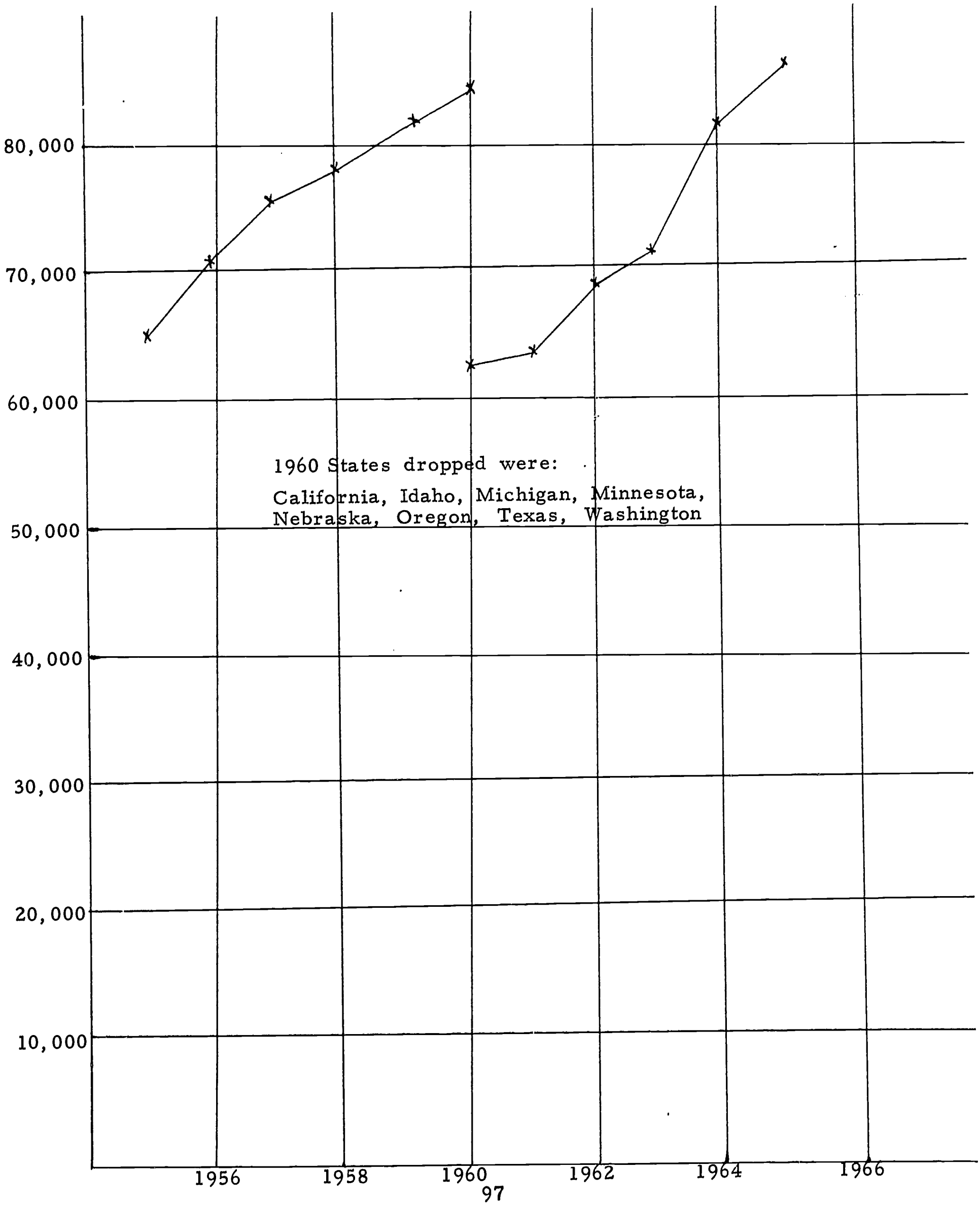
ENROLLMENT IN BIA HIGH SCHOOLS - 1959 TO 1967



Enrollment in high schools operated by the BIA increased from 5,661 in 1959 to 11,653 in 1967 (i.e., it doubled in only 8 years).

Chart V

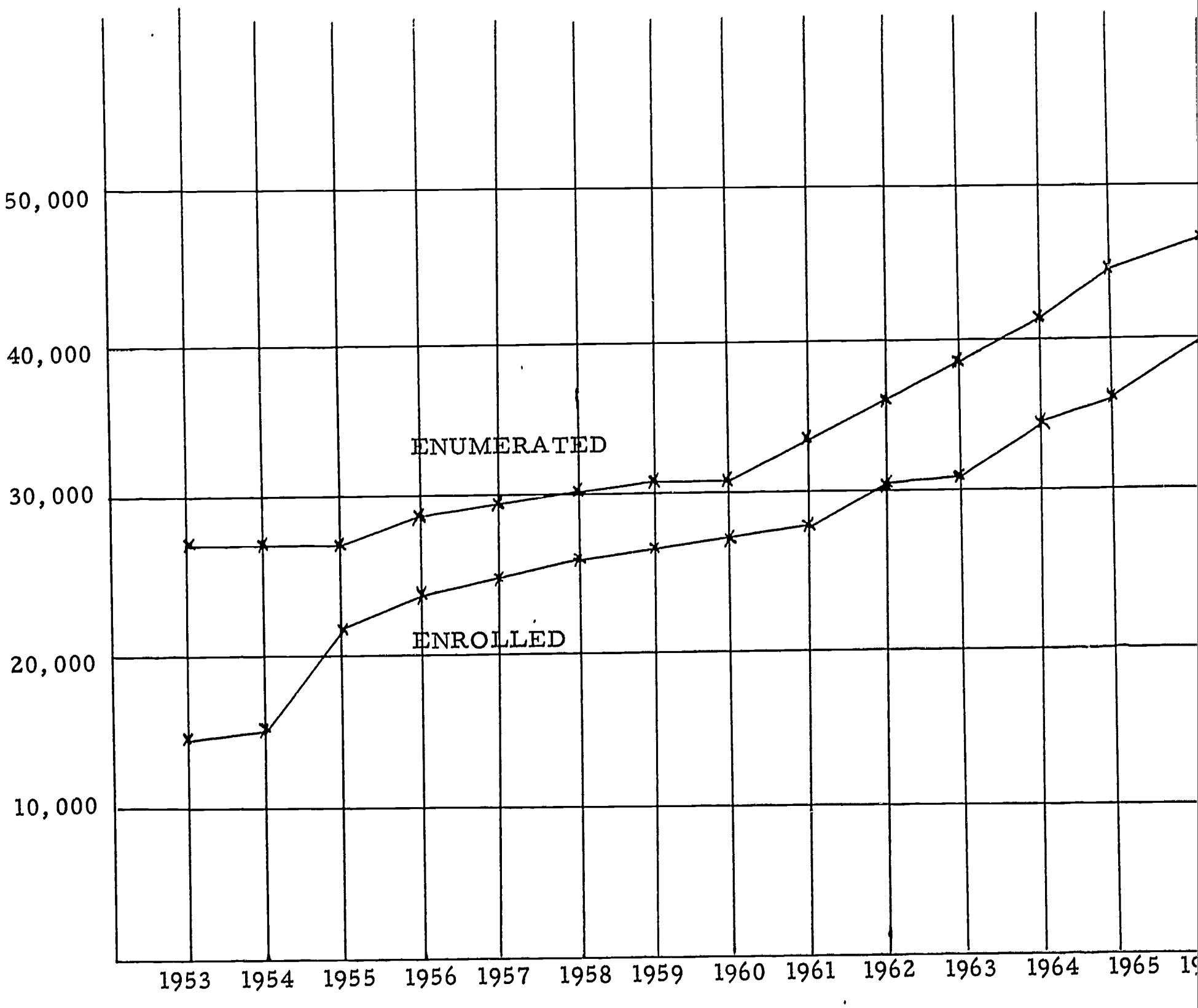
INDIAN ENROLLMENT IN PUBLIC SCHOOLS - 1955 TO 1966



B. As an example of a high population growth we show below the statistics for the Navaho Reservation. In the period from 1953 to 1966 (fourteen years), the school census showed that enumerated students increased from 27,000 in 1953 to 46,000 in 1966, a percentage increase of 70 percent. The percent enrolled increased from 52 percent in 1953 to 81 percent in 1955 and thereafter remained relatively constant, being 86 percent in 1966. The rate of increase in enumerated children from 1960 to 1966 was even more startling. In the six years from 1960 to 1966, the number of enumerated children rose from 31,000 to 46,000, a 48 percent increase. This is equivalent to an 80 percent increase over a fifteen year period. The reason for this sharp rate of increase is principally due to a sharp decline in infant mortality, coupled with a high fertility rate and little net emigration. The decline in infant mortality was principally due to improved health services provided by the Public Health Service.

Chart VI

ENUMERATED AND ENROLLED NAVAJO SCHOOLCHILDREN,
ALL AGES, ALL SCHOOLS - 1953 TO 1966



Conclusion: Indian Education Needs Projected to 1980

The findings of the education systems analysis and the projections of enrollment increases indicate extensive needs in Indian education over the next decade. The BIA education system, as it exists now, is not providing education of the quality necessary to raise the performance level of Indian students. At the same time, there is little evidence of any concerted effort to prepare a comprehensive policy on the education of the rapidly increasing number of Indian children. If the next ten years are to show improvements in Indian education, a number of questions related to these two issues have to be answered now.

First, the additional Indian enrollment of 98,000 (beyond the current 150,000) projected for 1980 must be accommodated. This requires that decisions be made between BIA and public schools, boarding and day schools, and new and extended facilities. If the percentage of Indian students in BIA schools remains the same, a limited growth in enrollment (about 31,000) may be expected in BIA schools. The overall population growth on a static land base (the reservations) means that population density will increase, so that a larger day school enrollment will become feasible. This may be obtained: (1) by building of new schools; (2) by extending existing schools, and improving transportation facilities; or (3) (particularly on the Navajo reservation) by changing some boarding schools to day school status. These three alternatives have been listed in order of the magnitude of the capital outlay required for each. The best method will probably be to weigh the economies of scale to be gained by building extensions and improving transportation against the cost of building entirely new facilities. Even to estimate importance of and need for transportation improvements will require coordination between the Education Division and the Engineering Division.

Once the scope of the Bureau's education responsibility has been definitely determined and the facilities for new pupils planned for, the school process needs have also to be determined. The maximum projection calls for 1,250 new teachers by 1980. The comparisons of existing BIA teacher characteristics and salaries with those of public school teachers suggest that these new teachers will be at or

or near the national average in age, education, and quality. While it is not clear what changes must be made, it seems reasonable to assume that this "average" group of teachers will not possess the necessary expertise with which to overcome the deficient rates of achievement, pupil retention and college placement in BIA schools. In order to overcome these lags, better teachers than those in public schools must be hired. Since an almost 50 percent increase in the number of teachers expected, an excellent opportunity exists to improve overall quality of BIA teachers. Improved methods of recruitment, selection, and training are therefore necessary.

In order to improve the quality of education, per pupil instructional expenditures, as well as total expenditures, must be increased. This increase must cover the higher teacher costs, as well as other new instructional costs. The data on administrative processes suggests that this might in part be achieved by a streamlining of the Education Division's support capabilities.

If these quantitative and qualitative increases are effected, it will be possible to improve pupil performance in terms of achievement, retention rates, and college placement and completion. If the change in quality is not accomplished, and provision is made only for quantitative increases, there is little chance of increasing the education achievement leves of Indians, or of effecting the economic improvement accruing higher levels of education.

It should also be noted that although the returns on education to Indians, discussed in the section below on the income benefits of education, do not appear as high as those for non-Indians, this condition is not necessarily static. Economic development of reservation areas can provide employment opportunities which will enhance the present rate of return on Indian education, thereby increasing the need and the likelihood of an Indian education system of greater quality as well as size.

Economic Returns on Investment in Education

The interaction of Indian education and economy is a complex process, not all of which is yet understood. An important hypothesis arrived at during the early stages of the system analysis was that the interactions were significant, based on national data correlating education level and income. This analysis, when compared to national data, led to some definite conclusions about the type of education that should be provided by the BIA and amply demonstrated the need for a more extensive analysis of the interaction between Indian education and economy.

It also seemed likely that major feedback effects exist: more education generating more income and more income in turn generating higher levels and more widespread education.

Economic returns for education depend on two major factors, the kind of education offered and the level of education attained by the majority of the population under consideration. A systematic analysis of Indian education has revealed that educational objecitves have not been sufficiently adapted to economic reality. The education offered in the BIA schools and its contribution to social and economic productivity are both inadequate. The value of education to the average Indian is far less than to his white compatriot.

An analysis of 1960 Census data showed the researchers that the annual expected earnings for Americans who have attended college is approximately twice that of persons who have only finished elementary school.[1] Whites with some college education earn $7,550 per year; those with primary education earn $3,980. Indians with college training earn $3,170; with primary school education, they earn $1,560. In relative terms, the increase in annual earnings is the same for both groups.

However, the earnings profiles differ significantly in scale by racial groups. For all education levels, expected earnings for blacks

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1 Sources: Average earnings by education for the total male population (age 25-64) in the labor force, whites, and non-whites (primarily blacks) are from the 1960 U.S. Census Report 7B.

Earnings for Indians in the labor force were calculated using the Indian sample on the One-in-a-Thousand tapes from the 1960 U.S. Census. Estimates were also made for Indians living on or off a reservation.

and Indians vary from 40 to 70 percent of white earnings at that level. Benefits of education are calculated as the absolute increase in earnings associated with more education; they are much less for the minority groups. Income benefits for whites for continuing from primary school to college are $3,500 a year, for Indians $1,600 a year. If costs of education are approximately equal for both groups, then the return to education, reflected in either a rate of return or cost-benefit figure, is appreciably less for minority groups.

Part of the gap in these expected income figures may be attributed to a lack of job opportunities for Indians as a whole. In most cases, Indians who stay on the reservation work in depressed, rural economies with high unemployment rates and low wage scales. However, even the earnings profile of Indians living off the reservation is appreciably lower than that of whites. These expected earnings are for Indians who participate in competition with whites in the wider national labor market. Low incomes for this group cannot be explained by a lack of job opportunities; they must be caused by a combination of employer prejudice against Indians and "real" productivity differences between whites and Indians.

Productivity of a worker is determined by a combination of skill attributes and personal factors, such as attitudes toward work, ambition, and responsibility. Economic productivity is influenced by both social and educational factors. Therefore, the lower productivity of Indians reflected by lower wages is by definition due to some combination of inhibiting social factors and inferior education.

Some of the gap in productivity between wightes and Indians must be attributed to a failure of the Indian education system to equip students with skills and work attitudes equivalent to those of whites.

In summary, income benefits of education for Indians are appreciably less than for whites. One contributing factor is the lack of job opportunities for Indians on the reservation. However, Indians in the national economy (off the reservations) also earn less than whites. A

significant portion of this lower productivity must be due to a lower efficiency of the Indian educational system in preparing students for economic functions and to a failure of the system to counteract work-inhibiting social factors brought by Indians to the school and the job.

This conclusion would seem to suggest a greater need for vocational training in school. However, before making this very important strategic decision about the relative weight that ought to be given to general education as opposed to vocational education, the effectiveness of vocation instruction should be considered.

An examination of the two strategies shows, surprisingly, that a general education yields twice the return of vocational training, at least in terms of increased income. Using data on monthly salaries from the 1960 Census for the blue collar and service occupations in which 76 percent of Indians work:

Occupation	Gen. Ed.: (1 yr. additional training in added income per year)	Vocational: (Same)
Blue Collar	$383	$249
Service	$549	$271

This shows that the general adage "leave school, learn a trade" makes poor economic sense. A much better maxim would be "finish as much school as you possibly can and then learn a trade" or "get specific vocational or occupational training." The dominant educational thrust of our economy is to postpone as long as possible highly specific vocational education and to extend general education for as long as the student is able to advance.

The relative superiority of general education versus specific vocational education is probably due to the fact that higher paying jobs require a specific level of general education as an entrance requirement. Generally, little or no vocational education is needed to enter vocational training. For many blue collar industrial jobs, the trainer can perform his task in a few months if he already has certain required skills, such as English and mathematics. This is not to say that persons with an eighth grade education or lower cannot be trained for industrial work. However,

the training time required for learning vocational skills will be significantly greater than for high school graduates, and the company may not be willing to undertake the expense and time needed for such training. In job competition with high school graduates, such candidates are at a very obvious disadvantage.

Firms on the Navajo Reservation were able to train workers who had had as little as an eighth grade education for industrial jobs in electronics. However, they had a very decided preference for high school graduates, who progressed decidely faster and earned more money than their fellow workers who had only an eighth grade education. Many industrial firms are not prepared to set up special training programs for educationally substandard workers, and will not locate on Indian reservations which have poor education standards. It is difficult to industrialize Indian reservations which have massive unemployment if (as is generally the case) the unemployed have substandard education. Education is a precondition to creating new employment.

Industrialization of Indian reservations is still in an embryonic state. Since the type of industry that will locate on the reservations in the future cannot easily be forecast, the nature and type of industrial skills that will be required are highly uncertain. General education confers a high degree ofmobility and adaptability to economic change, and greater mobility and adaptability to workers who will go through several occupations and jobs in their lifetime. The value of a general education is not lost when a worker changes jobs, although the value of very specific training is to some degree lost.

In conclusion, on reservations where the future composition of jobs and industries is highly uncertain, general education is preferable to specific vocational training. In addition, the economic returns of general education for the workers are significantly higher than specific vocational training.offers.

Chapter III

Economic and Community Interaction with Education

Interaction of Indian Education and Economy

The economic importance of an adequate general education, as discussed in the last chapter, was not the only conclusion arrived at by considering the mutual dependence of education and economy and society. Further analysis showed that, at least on Indian reservations, the major process interactions appear to be between the economic factors of employment, entrepreneurship and employable skills, and the education factors of type, level, quantity and location of schooling.

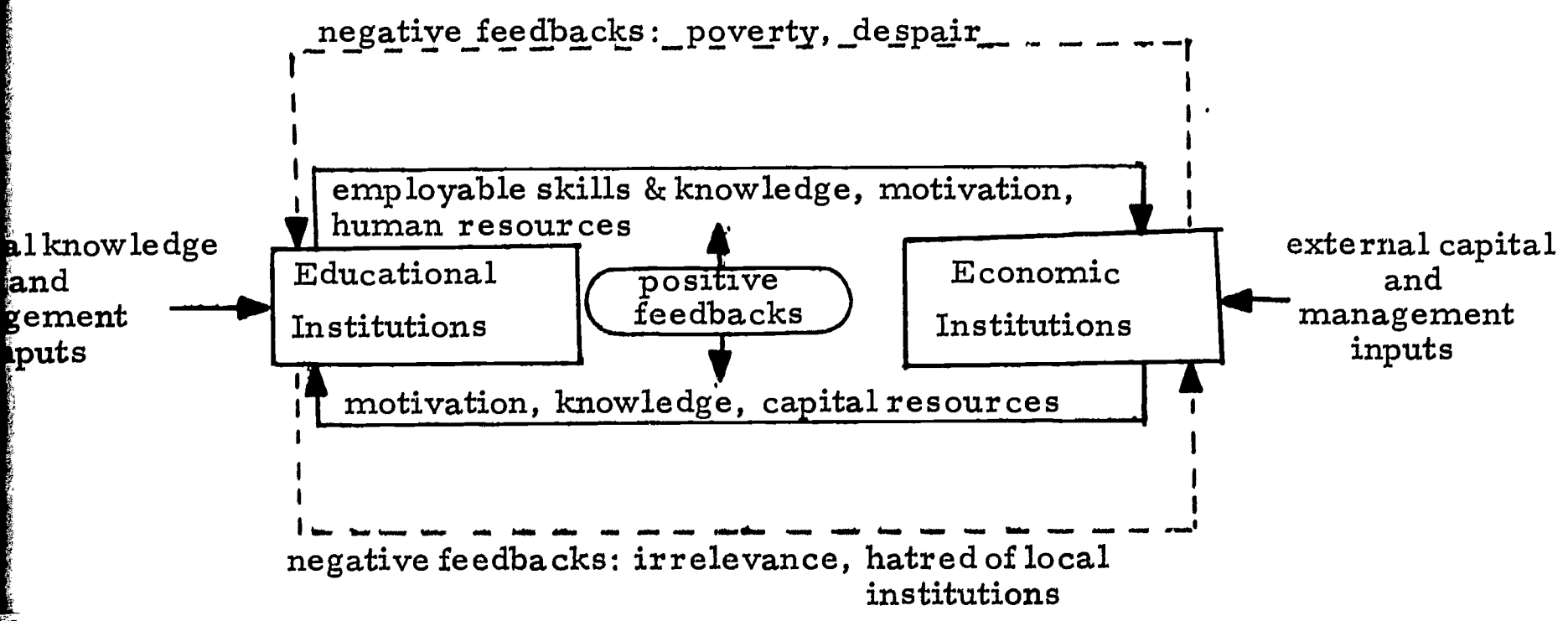
Labor-intensive industries tend to locate in the midst of plentiful supplies of appropriately skilled and priced labor. Since most Indian reservations have a relatively poor natural resource base, their labor supplies are their principal economic assets. This labor asset must be located, recruited, mobilized, transported, trained, and supported with services to be employed economically.

The reservation education system can contribute to, be irrelevant to or even deter and reduce the local employment of labor. If the only type of industry likely to locate on a reservation is one seeking cheap, unskilled labor in the manufacture of transportation-insensitive goods, preparing students for college entry will at least in the short run, reduce the local employment of labor. If, on the other hand, the type of local industry is one of advanced technology, employing skilled and professional persons as well as unskilled labor then the college-preparatory-oriented school may increase local employment as much or more than one that is vocationally oriented.

The work skills and aspirations of Indian Students, as formed at least in part by the schools, determine the characteristics of the local labor market. This is a major factor in determining the type and amount of industrial development locally. (For example, with the eduction being provided to most Indian students on reservations today, there is still too little incentive for outside industry to locate on the reservations in the face of transportation and infastructure disadvantages, and legal and political risks.)

The type and amount of local industrial and commercial development affects the quality and quantity of education locally available, both directly and indirectly. Directly, the principal effect is one of attracting labor to local residence, and then generating (at least in rational planning) the location of local schools to provide education to the children of this labor population. The indirect effects may include changes in student and parent attitudes toward the economic relevance of the school, with consequent changes in student achievement, and changes in the substantive knowledge and practical education level of the local adult population.

It may be seen that the relationship between educational and economic institutions is at least one of mutual feedback effects. Any system of feedbacks may be regenerative or degenerative: the effects "fed back" to other components (a school) from one component (a local industry) may grow with every cycle because of the additive effects of development (in this case, motivation and knowledge). They may also decrease with every cycle because of conflicting or cancelling effects (negative feedback), or remain roughly constant as positive and negative feedbacks balance. (See flowchart below)



Strong positive feedback between reservation education and economy, will cause regenerative effects which should rapidly increase the value of both educational and economic results. Naturally, external inputs of capital and management skills may be needed to start the process and overcome initial negative feedbacks. The fact that the regenerative effect between education and economy has not often been apparent may be due to insufficient external capital and skill inputs, insufficient or confused interactions between reservation educational and economic institutions, or both.

This rather complex process provides the rationale for the in-depth consideration of reservation economies and development problems that are an integral part of this report. Presented below is a profile of the present state of Indian reservation economic development, their assets and liabilities, and a discussion of the problems and possibilities related to the reservations' most valuable asset, their people.

Indian Reservations: A Profile of Their State of Economic Development

There are 97 Indian reservations with populations over 500. These reservations fall into the groups delineated in the typology. By examining a sample from each of these groups, the entire set of Indian reservations was effectively sampled. Some economic data which illustrate the present state of economic development of Indian reservations is listed below. The profiles show the per capita income of the reservations and the structure of the Indian economies. In addition, a comparison is made with per capita incomes of industrial areas of the United States. The data show per capita income with and without transfer income. Transfer income is defined as the value of received goods and services not derived from the employment of resources. It includes.

--public (categorical) assistance
--general assistance (BIA only)
--unemployment compensation
--Old Age, Survivors, and Disability Insurance
--surplus commodities
--Food Stamp Plan
--medical services
--tribal subsidy
--tax exemption - property
--tax exemption - income from exempt property
--management benefits under trust

The charts that follow depict the economic differences between the reservations.

The representative reservations, the areas they represent and their population are given below:

Area	Representative Reservation	Population (on or adjacent)	Density of[1] Population (no./1000 acres)
ABERDEEN	Crow Creek	1148	4.40
JUNEAU	Bethel	11, 900	
ALBUQUER-QUE	Santo Domingo	1909	27.35
BILLINGS	Crow	4112	1.81
	Cherokee	4641	82.14
MINNEAPO-LIS	Red Lake	2538	4.50
NAVAJO	Navajo	110, 000	6.96
PHOENIX	Gila River	7209	19.38
PORTLAND	Warm Springs	2.169	2.8

[1]On and adjacent population per 1000 acres of total reservation land.

. Per Capita income before and after transfers is given below:

Area	Income per Capita (excluding transfers)	Income per Capita (including transfers)
ABERDEEN Crow Creek	681.0	1234.0
JUNEAU Bethel	880.0	1047.0
ALBUQUER-QUE	491.0	807.0
BILLINGS	1245.0	1645.0
Cherokee	1740.0	2145.0
MINNEAPO-LIS	900.0	1234.0
NAVAJO	560.0	1457.0
PHOENIX	574.0	956.0
PORTLAND	2540.0	2773.8

Area	Forest[1]	Farming & Ranching[1]	Minerals[1]	Commercial and Industrial[1]	Gov't Reservation Based[1]	Other Reservation Based[1]	All Other Cash Income	Cash Income from Labor and Property	Total Net Income
ABERDEEN Crow Creek	0.0 (-)[3] (-)	282.0 (37)[3] (46)	0.0 (-)[3] (-)	95.0 (12)[3] (12)	373.0 (49)[3] (40)	14.0 (-)[3] (-)	14.0 (2)[3] (2)	711.0	783.0
JUNEAU Bethel	(26) 52.0 (1)	(-) 51.0 (1)	(-) 0.0 (-)	(53) 1340.0 (22)	(17) 2669.0 (44)	(4) 101.0 (17)	(-) 900.0 (15)	6007.0	8822.0
ALBUQUERQUE	0.0 (-)	174.9 (20)	.7 (-)	138.4 (6)	208.6 (24)	291.1 (33)	64.8 (7)	877.4	936.3
BILLINGS	234.2 (3)	4275.4 (55)	449.8 (6)	354.6 (5)	1598.2 (20)	225.4 (3)	668.4 (8)	7254.3	7978.5
Cherokee	172.5 (2)	74.6 (1)	0.0 (-)	6653.7 (84)	757.4 (10)	198.5 (2)	84.1 (17)	6991.9	8052.4
MINNEAPOLIS	705.4 (33)	99.3 (5)	.3 (-)	354.0 (17)	902.7 (42)	19.0 (-)	45.3 (3)	1944.4	2281.7
NAVAJO	2483.9	4406.8	10828.8	6504.7	30058.2	837.5	5410.5	52047.8	61665.7
PHOENIX	0.0 (-)	1998.6 (49)	382.7 (9)	150.4 (4)	543.1 (13)	421.0 (11)	594.0 (14)	3399.3	4147.7
PORTLAND	2308.0 (57)	67.1 (2)	27.5 (1)	504.0 (12)	486.2 (12)	331.0 (8)	315.0 (8)	1644.6	4060.8

[1]All income figures are in thousands of dollars.

[2]Total net income is the sum of wages and salaries (labor) property income, tribal income, income-in-kind.

[3]Numbers in parentheses are percentages of each sector's income in total cash income, where total cash income is the sum of wages and salaries (labor income), property income, and tribal income.

Two important observations can be made. First, the per capita income, including transfer incomes, is well below the U.S. average. Santo Domingo, the reservation with the lowest per capita income, has a net per capita income more than three times lower than that of the U.S. Only one reservation, Warm Springs, approaches the U.S. average.

Second, the percentage of income derived from commercial and industrial operations, on all but the Cherokee reservation, is four to eight times less than the average for the United States.

The reservations have made only minor progress toward becoming industrialized. The true significance of this can only be appreciated if it is noted that there are few other significant sources of income that can be created on the reservation other then manufacturing and commercial ventures. Only one reservation, Warm Springs, derives or can derive any significant income from forestry. Only one reservation, the Navajo, derives significant income from minerals and this is declining. A few reservations have some potential for further development of minerals (principally the Navajo and the Papago), but this development has not yet occurred. Growth of farming and ranching takes place slowly and such improvements as are made tend to be offset by very rapidly increasing populations growing on a static land base. In addition, mechanization has steadily reduced the number of people who can be sustained by farm and ranch labor. Although farms become more and more productive, their efficient operation only contributes to the decline in employment. Even those reservations that do derive over 40% of their income from agriculture are not rich. For example, Gila River, which derives 50% of its income from agriculture has a per capita income before transfer of only $600 per year.

Tourism is another potential source of income for a few Indian reservations which are located in scenic regions and easily accessible to visitors. The Cherokee, Navajo and Warm Springs reservations all derive a small portion of their incomes from the tourist trade. However, others, like Pine Ridge, Rosebud, Turtle Mountain and Papago do

not attract tourists for one reason or another. Even where the potential does exist, the capital and entrepeneurial talent necessary for building hotels, restaurants and tourist facilities are lacking. Tourism, therefore, offers some potential for long-range development, involving large investment and little return for many years, for only a small minority of Indian reservations.

There are many problems involved in promoting such development which no single program is likely to solve. The particular problems and constraints are discussed below, and in a subsequent section sets of programs are suggested. The role of education will also be examined, since through the education system, some needs may be met.

Although a few reservations have undeveloped economic potential from forestry, mining, tourism or agriculture, the majority do not have any comparative advantage or undeveloped resources. For example, Pine Ridge, the second largest reservation, has neither timber, minerals, agriculture or tourist potential to support its population.

The exploding Indian population is another contributing factor: populations have doubled and tripled in the last fifty years. At the same time, small mineral resources have been mined out and agricultural lands have suffered severe deterioration caused by erosion, winds and fragmented land holdings.

For this majority of reservations, economic development can not be achieved without outside assistance. EDA and SBA loans have been of little use because grants are usually made only where the rate of return and development prospects are favorable. The Warm Springs reservation which is relatively wealthy, owning over half a million acres of prime timber land with a population of only 2169 Indians, has small difficulty financing its sawmills and tourist attractions, while Pine Ridge can not acquire development loans because it has so little to develop. Furthermore, these loans are less accessible to poorer reservations who can not even prepare the applications or raise the funds that are required to secure an 80% loan.

The underdeveloped reservations who have no resources to exploit have been neglected by the federal government. This is particular-

ly true in the case of small reservations like Santo Domingo, Papago and Turtle Mountain. The only possible means for increasing incomes on these reservations and encouraging long-range economic growth is through labor subsidies to industries which are willing to locate in the area.

The causes of Indian poverty are complex, and there is no single cause for lack of development. Below, are listed the principal causes and constraints on development, as well as the fewer assets that reservations have to promote development. It should be noted that the list applies to "typical" reservations and that not all factors are present on every reservation.

"BALANCE SHEET" OF RESERVATIONS

Constraints or Liabilities:

RESOURCES:	poor agricultural lands, fragmented land tenure, degradation of the land through erosion caused by poor agricultural practices and overpopulation
ECONOMIC:	small internal markets, high transport costs, lack of capital, and limited access to normal capital markets; high wage costs compared to foreign countries
ENVIRONMENT & INFRASTRUCTURE:	poor internal communications, poor roads, lack of housing, severe climates, general lack of facilities and amenities attractive to industrial firms and middle class managers
HUMAN SKILLS & ATTITUDES:	lack of suitable education and motivation to become entrepreneurs, managers, and workers
SOCIO-CULTURAL:	lack of understanding of the process and attitudes needed for economic development; social disorganization, apathy, due to poverty
POLITICAL:	political dissension and conflict between traditionalists and modernists leading to paralysis of decision making; political structures unsuitable for making effective decisions

"BALANCE SHEET" OF RESERVATIONS

(continued)

POPULATION:	rapidly growing populations that have exceeded the capacity of the land to support them; a very youthful population structure leading to a proportionately large dependent population
HOUSING:	lack of suitable housing has limited industrial development. It is not sufficient merely to build industrial plants; housing must also be made available in order not to limit the number of Indians who can take advantage of new jobs
DECLINE IN DEMAND FOR AGRICULTURE & UNSKILLED LABOR:	farm mechanization and increasing demands by employers for skilled workers has materially reduced off-reservation employment opportunities in the last twenty years for unskilled laborers, who constitute the bulk of the labor force

Comparative Advantages or Assets:

RESOURCES:	some minerals, oil, gas, and coal that have been and are capable of being exploited
LAND:	large tracts of land sometimes having considerable potential for tourism and recreation use
LABOR FORCE:	high unemployment and rapid population growth which could provide potential workers for industrial and commercial establishments
CAPITAL:	some access to capital for development from governmental agencies such as BIA, OEO, HEW, HUD, SBA, EDA; capital can be used for education, training, health, housing, infrastructure development, and subsidies to industries

Although this balance sheet appears forbidding because the constraints on development appear to overwhelm the resources available for development, some modest degree of success has been achieved in

promoting growth. Over 100 industrial plants have located on Indian reservations despite the obstacles that confront them. The disadvantages for industrialists are being overcome by subsidies for plants and manpower training. There have been failures where plants which originally located on reservations have moved off for reasons such as cheap labor competition from foreign countries, their inability to adjust to the Indian labor force, the lack of facilities and housing, or the failure of markets to develop.

It is also clear that what has been lacking both on the reservation and in governmental agencies is a clear vision of what can be done to solve the problem of Indian poverty. An integrated program of industrial development by means of subsidies, the development of entrepreneurial management and worker skills and motivations by means of education, and the provision of suitable infrastructure of roads, housing, and facilities would promote economic development. Nothing magical is required but the orderly application of scientific planning to capital and human resources, keeping in mind the cultural and social differences that sometimes differentiate the Indians from other groups of poor people. Within a decade, the bulk of the Indian reservations could be brought close to the average incomes and employment levels of the rest of the United States.

What is required is an integrated program to attack all the causes and constraints simultaneously rather than piecemeal programs which subsidize an industry here, build houses elsewhere, and improve education at a third place. It should be evident that educating Indians will, of itself, not provide jobs for them; it will merely increase the unemployment of educated persons. Conversely, spending vast sums on attracting industries to reservations without insuring that there are Indian workers who have the education and the motivation to take these opportunities or that housing is available so that they can relocate near the plant, is extremely wasteful.

In the section below are discussed some of the more important assets and liabilities mentioned in the balance sheet. Included are discussions of the problems of industrialization, housing and human skills and attitudes. An outline of PROGRAMS designed to overcome these constraints by capitalizing on the assets will be found in Chapter

Objectives:

The objectives of Indian economic development are:

1. reducing unemployment and underemployment,
2. providing employment with acceptable incomes,
3. providing opportunities for advancement,
4. providing employment on or near the reservation,
5. providing employment that does not conflict with cultural preferences.

All but two of these objectives are shared by communities throughout the United States. The last two are particular requirements of Indian reservations.

It has always been a matter of individual choice, based on personal desires, ambition and tribal custom, whether to seek work off the reservation, where higher-paying jobs are sometimes available. However, the future economic development of most reservations will depend almost entirely on the location of industrial and commercial enterprises on or near them, and the only natural resource which most reservations possess to offer industries is an abundant, unskilled labor force. For this reason tribal councils have sought to discourage their constituents from emigrating. The only way to prevent the drain of the industrial labor force from the reservation is to provide jobs nearby

The cultural preferences of Indians for particular kinds of work are also important. Most Indians object to "woman's work", such as indoor factory or assembly labor as opposed to manly occupations like logging and construction. In addition, most Indians prefer seasonal or intermittent work to a forty-hour week.

INDUSTRIALIZATION

Industry and the Reservation:

New industrial jobs on the reservations will come from three sources: expansions of existing plants on the reservations, creation of new firms and the establishment of a branch plant by a national firm. Although the first two are common occurrences in the more industrial areas, most Indian reservations will likely turn to the third source for industrial jobs. This means competing with other state and local development agencies, and with regions endowed with ample public infrastructure, special tax and credit incentives and closer proximity to industrial markets. Indian reservations must therefore compete most vigorously for those industries with characteristics best suited to their particular resource and geographic situation. Those industries will have the following characteristics:

a. The production processes will be labor-intensive so that large amounts of relatively inexpensive labor will be required;
b. Transportation costs per unit of output are low; and
c. Skilled labor and managerial requirements are low.

Plants which exhibit these characteristics have not located on reservations in the past for a number of reasons. Many firms have preferred to locate plants abroad to take advantage of extraordinarily low wages in developing countries, where increased cost of transportation is more than offset by savings on unit labor costs. Furthermore, the minimum wage requirement in the United States has certainly been a factor which has encouraged overseas investment.

Benefits from Industrialization:

The subsistence wage which most unemployed or partially employed Indians earn is $600 per year, less than one-fifth of the national minimum wage of $3200. Since many reservations have unemployment rates of 50% or more, as much as a fourfold increase in income would be possible if enough industrial jobs paying minimum wage could be made available. The gap between the minimum industrial wage of $3200 and the subsistence wage or income of $600 is so large that

considerable resources must be allocated to subsidize the industrial plant because of the disadvantage of locating on the reservation, the net increase in income from industrializing, even taking the subsidy into account would be considerable. To quote an actual example: the Fairchild Camera plant is located on the Navajo Reservation. In that case subsidies to labour and subsidies for capital construction amount to about 30% of the wage bill, i.e. about $1000 per employee per year. Since about 1000 Navajos will be employed, a net gain of $2,200,000 per year accrues to the reservation from this one plant. It is evident that a subsidy that attracts a firm to the reservation is an investment that has an extremely high rate of return.

Several types of subsidies are appropriate for Indian Reservations.

HOUSING

An important constraint on the industrialization of Indian Reservations has been the lack of suitable housing. This has been particularly the case where the reservation had a low population density, (e.g., the Navajo Reservation). A firm will often establish itself on the reservation in a fairly remote area in order to tap the unemployed labor force. Workers are recruited from a large geographical area, because of the low density, inadequate provision is made for housing these employees at or near the site of the plant. This lack of housing effectively limits the proportion of the labor force that is available for employment to those who are within convenient commuting distance. Because of poor roads, and the lack of public transportation or private motor vehicles, only a fraction of the labor force is actually available for work unless housing is built. The expansion plans of a number of important industrial concerns have been definitely held up by lack of housing for potential employees. The lack of housing for supervisors and managers has similarly acted as a constraint on the expansion of some of these firms. In the above situation, a large potential employer recruits in a low density area with poor roads, and there is no alternative to the building of new houses. The responsibility for new housing is not one which the industrial firm will, or can, undertake.

It is clear that the full implication of the industrialization of rural areas has not been realized, that substantial capital investments must be made in housing, and that in essence a number of new small towns need to be created. Planning in anticipation of future needs is poor, and only after great shortages are clearly evident are steps taken to alleviate the situation. By this time expansion plans may have been shelved or the plant moved off the reservation. The costs to the reservation of this occurring are very high since poverty only will be alleviated through rapid industrialization.

The reason for the lack of responsiveness of the Bureau of Indian Affairs to housing needs is partly administrative and organizational. Some comments below indicate the present situation. A few modest proposals are also made by which the situation may be improved. The provision of housing is an absolute prerequisite to the successful industrialization of low density rural areas, which comprise the bulk of the territory of Indian reservations. Housing in these circumstances is not a luxury or even a consumption good, but should be regarded as a necessary capital investment for industrialization. The right priority has not been given to housing, partially because its role in the development of the reservation has not been appreciated. Other reasons for the poor quality of the housing effort are reviewed below.

Constraints on Housing

Political constraints encountered by Indian housing programs are the interpretation of administration rules such as building codes, attempts to change these rules, and political decisions related to housing programs. One difficulty of the low-rent housing program, for instance, has been the desire of the Housing Assistance Administration to maintain high construction standards, perhaps unrealistic in terms of user preferences and needs.

Political constraints may be further grouped into areas of (1) government administration and (2) citizen participation.

Government Administration

The BIA encounter constraints in the form of poor coordination among the various agencies and administrative divisions with whom it must work. The fragmentation of the various agencies associated with Indian housing is made painfully obvious in the BIA report.[1] According to that report, BIA has autonomous control of its Home Improvement Program, but must work with HUD for materials supply and the Public Health Service for plumbing on the Rosebud Minimum Shelter Project. The low-rent housing program is funded by the Housing Assistance Administration and administered by local tribal housing authorities. The Housing Assistance Administration is part of HUD and is concerned with low cost housing programs and mutual self help to housing programs. The Mutual Self-Help Program is jointly conceived and administered by the HAA and the BIA. The OEO Builder-Training Project makes use of the cooperative services of the OEO, the Manpower Development And Training Program, HAA and BIA.

Another example of the lack of administrative coordination is obvious with the Bartlett Amendment (S. 1915) to the Housing Act, which is expected to be considered by Congress in this Session (according to the report) which authorized $10,000,000 for native housing in the Juneau region. This is to operate through the State Housing Authority, and "it is not clear whether the BIA will play any part in this program."[2]

The fragmentation of authority precludes major administrative economies, and causes federal housing programs to lack the flexibility necessary to deal with the special problems of Indian reservations. The plethora of programs and authorities is confusing and frustrating to all

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1 "Indian Housing: Needs, Alternatives, Priorities, and Program Recommendations," Appendix D, Bureau of Indian Affairs, October 1966.

2 Ibid, p. 67.

whether individuals, tribal housing authorities, or private developers, seeking federal assistance.

Another constraint is that many housing agencies remain inadequately staffed and salaried. The HAA first became concerned over the managerial capacity of tribal authorities to administer low-rent programs, and refused to increase funds until remedial action was taken. In response, the BIA program recommendations for 1968 included expansion of the staff of the housing development services in the areas of audit and other supervisory responsibilities from sixtyfive to one hundred employees, and expansion of the staff of the Home Improvement Program from 8 to 43 employees. Moreover, 75 employees are to be added to the present staff of 119 of the adult education program.[3]

Enlarging the staffs of various agencies without integrating housing planning to the overall development policy is likely not to solve administrative problems, but could create a number of new ones. There is a general scarcity of administrative talent and corresponding lack of managerial ability, which often leads to an excessive number of low-level employees and an insufficiency of those possessing higher authority, On Indian reservations, this scarcity of talent is even more acute, whether through insufficient education or simply lack of opportunities to develop that talent. The Aberdeen region suffers from this scarcity, for instance. According to the report, one housing authority (Pine Ridge) is in serious trouble and officials of the HAA have expressed considerable concern about several others.[4] As the report suggests, one solution to this problem would be the establishment of an intensive program for the training of tribal housing administrators and other managerial personnel. The importance of all forms of educational input are clearly indicated.

Citizen Participation

The opposition of the Indians themselves to various housing programs can be a constraint. For example, the costs of the low-rent housing program were heightened due to the resistance of the Indians

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3 BIA, op. cit., pp. 45-47.

4 Ibid, p. 53.

to cluster housing.[5] This resistence was confirmed, at least in the Plains, by Indians interviewed on the reservation. A program may also cause community conflict such as that produced on some reservations by the BIA Home Improvement Program, which enabled some indigent families to hve better housing than their neighbors and thus provoked envy and jealousy.[6]

These incidents demonstrate the importance of constant reference to user needs and preferences in the design and construction of renovated or new housing. Indians must feel that their needs are being actively considered if their full cooperation is to be obtained. They should be consulted as much as possible before and during the construction of new housing. Through this their pride in the project will be increased, as well as their cooperation secured.

Project leaders should begin early to encourage reservation inhabitants to consider their housing plans objectives, to familiarize them with the relative benefits and costs of various alternatives, and to involve them in the planning process when projects are to be designed.

Financial Constraints

Funds for Indian housing may be provided from a variety of sources. One source is the Indian tribes themselves: judgment awards and tribal incomes (as opposed to individual incomes) could be used toward financing construction or renovation of housing. Thirty-four Indian groups now have judgment funds in the Treasury totalling $94 million; The release of this money must await the enactment of special legislation by Congress. If the judgments continue at the rate of the past seven years (roughly $25 million per year), the tribes could have available as much as $125 million for housing and other purposes over the next five years. However, the proportion of these funds committed to housing renovation or construction

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5 Ibid., p. 27.

6 Ibid., p. 25.

has varied greatly.

The BIA asserts that Indians should be encouraged to rely upon their own resources for fulfillment of their needs. Even where adequate resources are available, however--and this is the exception rather than the rule--the physical and social costs of such a policy are likely to be extreme. The wide geographical dispersion and the peculiar needs of the Indian population indicate that more efficient program coordination and a more systematic approach to funding Indian housing projects would yield significant savings.

The financing of housing projects is a complex amalgam of schemes; programs are undertaken by the BIA, and under FHA Title I and Title II programs, and the Farm Home Administration program. Further complexity is added by the apparently unsystematic manner by which funds are dispersed among individuals and tribes.

This leads to such problems as are encountered in the OEO Builder-Training Project, where the BUA issues short-term loans to the tribe for equipment and cost of materials, and the Housing Assistance Administration then advances money to the tribal housing authority so it can purchase the new homes from the tribe itself. There is yet another potential transaction involved, in the transfer of ownership from the tribal housing authority to the individual. In some cases one of these transactions is eliminated: in the Rosebud Minimum Shelter Project, for instance, ownership passes directly from the tribe to the individual after six years of occupancy in the house.

In the conventional low-rent and mutual self-help programs, the tribal housing authority in effect serves in the capacity of landlord, in that the family pays monthly amounts to it as "rent." With the low- rent program, this rent is a stated amojnt; with the mutual self-help program, there is an income ceiling on initial eligibility for new housing of $3,000 to $4,000 annual income.

To suggest that a basic, overall plan needs to be formulated is not to suggest that a uniform program of external assistance be imposed. The great variations in size and level of economic development of Indian reservations requires a flexible program of funding and housing construction.

What is needed is a strategy or a set of decision rules permitting an evaluation of alternative financing programs on the basis of their relationship to development policy. The size of the required development, available resources (especially manpower) and money, user needs and the rate of development substantially effect the resources available and should help to determine which financing programs are selected.

Construction Constraints

Housing construction itself has certain inherent constraints which must be taken in account by the planner of an Indian housing project. The must crucial constraint is sufficient scale, for a large overhead in the form of machinery, production teams, and technological know-how is an important precondition for efficient mass production of housing. The dependence of the housing industry on a single site for final fabrication of the product means a dependence on transportation and the consequent constraint of transportation costs. This is particularly a problem in the Juneau area. This area also suffers severely from the seasonality felt in lesser degree throughout the housing construction industry. This means variation of supply and demand conditions, and works against the establishment of permanent relationships among contractors, workers and subcontractors. It encourages contractors to reduce their overhead costs to a minimum, while the activities which enter into these overhead costs are often an important source of long-run technical and managerial improvements.

Seasonality also affects the housing construction inasmuch as weather conditions are prime considerations in the planning of housing design and the selection of building materials. Under severe weather conditions, it is costly to construct housing fulfilling only the primary user need of shelter, and the secondary needs of aesthetic appeal of space may have to be sacrificed if the cost is to remain low.

Another major constraint on low-cost housing is the unsophisticated nature of work methods, particularly in the homebuilding sector of the construction industry. Three innovative methods have been devised to maximize the financial and psychological benefits to the Indian recipient of new housing: the mutual self-help program, in which tribal members

contribute their labor and thus acquire a "sweet equity" in homes otherwise financed from funds of the HAA; the newly proposed Whittaker concept, in which the shells of frame houses are constructed on a massive scale and their recipients prepare them for occupancy; and the Inland Steel "Steelcor" approach, in which Indians participate both in the fabrication and erection of the new housing. Problems of inefficient workmanship are of course likely to be encountered in the early stages of such participation projects. The OEO Builder Training Project which trains Indians for the building trades, is similarly inefficient; this is reflected in the high cost ($18,000) relative to other low-cost programs. Attention must be paid to the integration of basic education requirements, vocational training and the development of construction capacity. Educational input will become increasingly important as the construction industry becomes more sophisticated. Furthermore, Indian participation at higher levels in the construction industry (a function of a broadly defined educational input) is likely to provide increased satisfaction of user needs and remove some intra-community constraints.

All these constraints increase the cost of Indian housing. Yet the costs of inefficiency, and of the lack of a well-coordinated economic development policy, are social as well as financial. One of the more important social costs to consider is a particular program's direct and indirect effect on its beneficiaries' level of incentive. For instance, the income ceilings for eligibility imposed by the mutual self-help and low-rent housing programs tend to discourage incentive to find better employment or to seek further training in order to raise income. Such limitations tend to force social groupings on the basis of income (e.g., all the low-income families would be housed in the same neighborhood) rather to permit a heterogeneity based solely on user preferences. Use could be made of available federal housing subsidy plans in order to allow maximum mixing of various income levels. This might also tend to alleviate or eliminate the social stigma which tends to accompany public housing.

Incentive may also be inhibited by insufficiently defined standards of eligibility under which some indigent families have better housing than their neighbors, for reasons which are unclear or invalid.

The planner of a housing program must also take into account the potential effects of the program on the social structure of the reservation, and also that social structure's effects on the success of the program. A program of relocation away from the reservation, or merely to a different part of the reservation, is socially disruptive. Its potential acceptance must be viewed in terms of a trade-off, from the user's point of view. Users may be willing to accept homes of lower quality in return for being in a familiar neighborhood, in order to remain near relatives or simply to be with those sharing their background, interests, and attitudes. The prospect of a higher income or a more interesting job with relocation often does not outweigh these considerations.

Improved housing also produce adaptation problems for families moving into new houses equipped with some unfamiliar devices. The interrelationship of home and educational environment is once again the key to improved living standards for the Indian.

RESERVATION UNEMPLOYMENT

Accurate statistics on Indian unemployment are difficult to obtain, partly because data is inadequately and unsystematically collected, and partly because it is difficult precisely to define unemployment. Many Indians work in seasonal jobs, or work part time in agriculture; it is difficult to decide whether such a person should be considered unemployed.

Some recent statistics are available for the Aberdeen Area, and portray the extent of unemployment in the Dakotas. As of March, 1968, the data for fifteen reservations in the Aberdeen Area shows:

Total Resident Indian Population	45,000	
Available Labor Force	13,250	
Employed	6,800	
Part Time		2,100
Full Time		4,700
Unemployed	6,450	

Even if both, part and full time is considered, almost as many Indians are unemployed as are employed. On individual reservations, unemployment rates range as high as seventy-eight percent, for Fort Totten, and seventy-three percent, for Crow Creek, and as low as twenty-two percent, for Yankton.

The fifteen reservations include all those in the three states of South and North Dakota and Nebraska. In 1960, unemployment among the general population of these states was low:

South Dakota	3.7%	Totals for States
North Dakota	5.4%	
Nebraska	3.0%	

While there may have been some increase in unemployment in these states since 1960, it is nonetheless clear that Indian reservations have 10 to 15 times the unemployment rate of the states in which they are located. Indian employment is, therefore, minimally correlated with employment in the states in which the reservations are located; unemployment on Indian reservations cannot be attributed to declining state economies.

In the Aberdeen Indian Area, the level of unemployment is between 50 and 75 percent, depending on the categorization of seasonal unemployment; this grave situation has worsened still further since 1960, owing to agricultural mechanization and the result decline in the need for labor. Only 350 out of employed 6,000 Indians, or about six percent, worked in manufacturing concerns on or near the reservation. This figure is highly significant; the remaining ninety-four percent must therefore be employed in marginal farming operations, by the BIA, or in such government programs as OEO, CAP, and FHA.

The level of employment in industrial concerns is, moreover, declining; in 1968, twenty-five percent of the industrial concerns is, moreover, declining; in 1968, twenty-five percent of the industrial jobs in the Aberdeen area were abolished when two plants on Pine Ridge closed. A regression in industrial employment thus compounds the permanently declining demand for agricultural labor. The only employment growth areas are in government sponsored poverty programs, the duration of which is undertain.

The unemployment level in the Dakotas is exceeded by only by that in Alaska; in the other areas, the situation is not much better. An unemployment rate of fifty to seventy percent is clearly not conducive to effective education. The despair, social disorganization, and loss of self-esteem and caused by massive and long-standing unemployment are extensively documented and cause an erosion of human resources which may take generations to restore. Alcoholism mental illness, a loss of self-respect, and low motivation to work are all consequences of unemployment; all are common on Indian reservations.

Extensive documentation on unemployment among the entire Indian population is not necessary to establish that the situation is critical. A serious commitment, of thought, of time, and of money, is necessary if these grave conditions are to be remedied.

Abt Associates, Inc. has concluded, on the basis of its analysis of the economy of the reservations, that a program of labor subsidies for industrialization of the reservations is probably the most effective (and perhaps the only) method of reducing mass unemployment.

Development of Skills and Attitudes for Economic Progress

There are three broad categories of skills and attitudes that are needed for economic progress: entrepreneurs, managers and employees. The first is the development of entrepreneurial skills, the motivation and aptitude to start new business operations. This involves the seeking out and recognition of economic opportunities and the gathering of resources. Management skills are required within the context of an on-going business and involve principally the management of people and resources to achieve a desired end. A good employee must be reliable and responsible in addition to knowing some skill or aptitude.

A. Entrepreneurship: The reservations exhibit very considerable differences in the development of entrepreneurial skills. The Cherokee Reservation has perhaps a hundred small stores and business, which are operated by Indians, while a much larger reservation, Pine Ridge, has fewer. Warm Springs has an active tribal council which undertakes ambitious economic projects like lumber mills and construction of vast recreation complexes, while the Papago Re-

servation has a tribal council that has as yet shown little activity in planning for economic development. The Navajo Reservation has been active in developing its oil and gas and mineral deposits by leasing to white-owned firms, but there has been very little development of independently owned Navajo business ventures.

The reasons for these differences are complex, since entrepreneurial development is a function of motivation, skills, financial resources and economic opportunities. Motivation is a complex function of socio-cultural patterns, and, the entrepreneurial success of the Cherokees seems to be due to their long contact with whites, their agricultural traditions, which have predisposed them to capital accumulation and management of resources, and their fortunate location in the Smoky Mountains, where tourism is booming.

The success of the Warm Springs Reservation appears to be due to the fact that English is a common language, since there are three separate tribes on the reservation, to the fact that the land has not been subdivided and sold to whites to a high level of education, to energetic tribal leadership, and to the availability of large timber resources and a location which attracts tourists.

The relative failure of entrepreneurial activity on the Navajo Reservation appears to be due to a cultural set which does not reward individual initiative, an extended family system which discourages the individual accumulation of wealth, and a rather hostile environment, with poor communication, low population density, a very low level of education, poor land, and lack of extensive cultural contacts with whites, and poor English language skills.

Likewise, the Sioux have had little entrepreneurial success; and this can be traced to the isolation of the reservations, the fragmentation of the land and a cultural pattern derived from an original hunting economy which does not tend to produce the skills and attitudes related to entrepreneurial activity (i.e., the accumulation of a management of resources).

Entrepreneurship is not an easily-learned skill. It is usually acquired through the course of a young person's life through exposure to commercial enterprise and ambition. Most American entrepreneurs

have engaged in some sort of profit-making activity before they have graduated from high school. The parents and neighbors of most Indian children are subsistence farmers, or migratory laborers, or unemployed. In this type of socio-economic environment, the Indian youth has very little ambition beyond a desire to make life easier, and knows nothing of initiative, risk-taking or entrepreneurship.

It is evident that special entrepreneurial training is needed to stimulate the Indians and enable them to overcome the very real psychological barrier that exists in becoming an entrepreneur for the first time. A graded set of economic games and exercises for the classroom might build up confidence and attitudes. This should be coupled with deliberate attempts to create student economic enterprises, however small, by which the students could develop their confidence and start to accommodate themselves to the role of the entrepreneur.

Although entrepreneurial bahavior is determined by many factors, it appears that good English language skills and extensive cultural contacts with whites stimulate the process. On reservations like the Navajo reservation, where severe cultural isolation discourages recognition of economic opportunities, entrepreneurial activity will develop at far too slow a pace unless actively stimulated. In a case like this, an active program is needed to stimulate the population to become aware of local economic possibilities which are not being exploited because the traditions of the tribe do not encourage such activity. Although formal instruction at the high school level for potential entrepreneurs is not a traditional educational objective, there is a clear need for adopting a program to deliberately foster such behavior on Indian reservations.

B. Management Skills: The reservations are less able to provide management services to their own business enterprises than they are to furnish entrepreneurial initiative. For example, 'Warm Springs has been successful in promoting large scale economic projects like a saw mill but cannot find competent Indian managers to run the projects. Providing administrative management or even lower level supervisory management is a pervasive problem throughout the reservations. The reasons for this are the lack of basic skills

and an unwillingness of to take on supervisory roles which necessitate giving orders to fellow workers*. The lack of management skills is attributable to the absence of past economic development projects or businesses which might have provided a training ground for managers, and lack of the educational qualifications needed to become a manager.

Very little management training is given by any but the largest and most sophisticated companies on the reservations. Companies, such as Fairchild Camera and General Dynamics on the Navajo Reservation, are making genuine efforts to train and develop Indian supervisors and managers. Priority should be given to choosing companies for development on reservations that are willing and capable of providing such training. The Navajo experiments have shown that despite the cultural inhibitions of Indians towards becoming supervisors, these inhibitions can often be overcome with a careful training program. The development of Indian management for Indian-owned-and-run businesses is more of a problem, since there is generally no group that can provide the training. In this case special management programs will be needed ; these are discussed below.

C. Employee Attitudes and Skills: Based upon the findings of Abt Associates personnel in field interviews with employers and other informed observers on the reservations visited, a number of conclusions have been reached about attitudes and skills of the rank and file. Although the sample of employers is quite small, their experience reflects contact with Plains, Southwestern and Northwestern tribes and their statements corroborate most of the literature.

However, since employers spoke primarily about their problems with Indian employees, their responses tend to emphasize shortcomings rather than either Indian attributes that are particularly good, or attributes that are present in minimally adequate degree, but which would be desirable if more strongly accentuated. Those employers that are able to incorporate Indians into their work forces successfully

*cf., Charles K. Ray, Alaskan Native Secondary School Dropouts, pp. 116-118.

and effectively praise such qualities as patience and manual dexterity. Generally, desirable characteristics of workers that Indians do possess, and which therefore create no problems, are not emphasized in interviews.

The qualities that were mentioned most frequently fall into four groupings: reliability, responsibility, attitudes and motivation and specific skill needs.

The characteristic most frequently mentioned by employers on all reservations, is work reliability. They seek employees who do not have high rates of absenteeism (whatever the cause: health, family problems, alcohol, etc.), who are punctual, or who will call in to excuse their absence. They also prefer employees who remain employed long enough to obtain experience and training and become efficient workers (i.e., return some of the training investment).

Employers note that unreliability is not universal among Indians. Women tend to be more reliable than men. Old workers tend to be more reliable than younger workers. There is often a core group that exhibits adequate reliability. These are the employees who have been employed for some time and are well adjusted to regular employment. The high rates of turnover (30 percent and more per year in many plants) occur among a marginal group of workers outside the reliable core. A firm with 30% turnover per year may have nearly 70% of its labor force that is very stable. No explanations for the differences in reliability have been adequately supported, although a number of hypotheses have been advanced: family background, exposure to white society, mixed blood, marriage to a good woman, etc. Reliability does not seem to be correlated with education level, however. Employers would like to find employees who understand the importance of their reliability and who have enough sense of their responsibility toward the production process to meet the requirements of regular employment in industry.

Responsibility, in the sense of understanding the need to be reliable, as above, is the most basic need. Other aspects of responsibility are desired, however.

First, Indians tend to avoid positions and responsibilities that set them apart from their fellows. Many do not wish to "succeed" by

attaining supervisory functions because this would subject them to criticism from their peers.

Second, but intimately related, Indians avoid positions or actions that involve reprimanding, disciplining or giving unfavorable information on fellow Indians. Supervisory positions that lead to such uncomfortable situations are avoided. Although often willing to work with great industry, and sometimes adequately reliable, the Indian worker does not, in general, advance to levels of supervisory or managerial responsibility because of unwillingness to risk conflict situations with other Indians (according to employers).

In addition to the most important attitudes toward reliability and responsibility, other motivational problems are mentioned by employers. Because of the size of the sample of employers, no ranking of comments about these attitude problems according to frequency or severity is warranted.

1. Attitudes toward production: Comments of employers were mixed. Some employers said that with regard to quantity and quality of product, waste reduction, etc., Indians were as good as other low-skilled labor forces. Other employers found that there were problems in this respect. Tribal differences may account for this. General Dynamics found very few such problems with the Navajo, while employers on some Plains reservations were very dissatisfied and employers in the Northwest responded somewhere in between.

2. Wage-willingness: If Indians are aware of higher wages in other labor markets (whether or not they have access to those labor markets), they tend to scorn low wage levels on the reservation, even though this means unemployment. If income from welfare transfers, plus other highly irregular sources of income, approximates what the Indian could retain after 40 hours work, the Indian often opts for slightly lower income with greater freedom and no job responsibility.

3. Indians consider some work suitable for males to perform, while other occupations are considered "women's work." In the former category are more active, mobile, even dangerous occupations:

driver, mechanic, welder, logger. Repetitive tasks involving small articles tend to be considered women's work. "Stoop labor," or crop-picking, is also avoided by males.

4. Both employers and successful Indians have remarked that Indians do not seem to be objective-oriented. They lack a planning sense; they do not adapt problem-solving techniques. This means that Indians accept problem situations as given, rather than setting about to change them. Although they may know what they would like to achieve, they are reluctant to "upset nature" by problem-solving plans and action.

5. Employers in most areas mentioned the problems caused by alcoholism. Absenteeism has been mentioned above in connection with reliability, but is enough of a distinct phenomenon to warrant separate mention.

6. In some areas (Northwest) employees in service concerns (especially tourism) had no complaints about Indians' attitudes toward providing service. In other areas this was apparently a problem. Training in service skills or attitudes is needed if tourism is expected to be important.

In industries that have low skill requirements, the problems of lack of education and lack of specific trade training are not of great magnitude. It can be said that for the majority of the labor force on most reservations lack of skills is not a source of difficulty. Few employers gave much importanct to the educational level of employees, as long as they could perform effectively. In some cases, literacy was considered important. One major employer felt that a high school education was slightly helpful in learning new tasks more rapidly. However, some skill needs are important on a different level:

1. Where English is not spoken frequently by all, some employers express a need for better English language training and better communication between Indian and supervisor.

2. In a general sense, Indians lack a mechanical sense of the sort that Caucasian boys absorb through exposure to machines and tinkering with mechanical devices. For example, they do not understand what happens within an automobile engine. They do not recognize the need for maintenance. They seem to have poor judgement in general about what machines can and cannot do and how to operate them (vehicle operation is a particular problema and judgement about speed is especially bad).

This analysis of the three major areas of labor capability has attempted to define the labor problems industry faces when it locates on an Indian reservation. Although many of these have been identified elsewhere, no concerted effort has been made to systematically discuss them together. Based on this synthesis, Abt Associates Inc. has generated a number of program recommendations for improving the quality of the labor force (see below). Most of these deal with specific problem areas but they attempt to take into consideration the whole range of entrepreneurial, managerial and employee capabilities. In planning manpower training programs, in school or out, this should allow a breadth of materials and maximum flexibility for the non-skill-specific aspects of manpower training which seem to be the major constraints on providing an efficient labor force in Indian communities.

THE INTERACTION OF BIA SCHOOLS AND INDIAN COMMUNITIES

Social and cultural change in Indian communities is so interrelated with education that this raises critical questions of education policy, just as reservation economics does: What has the role of the school been as an agent of change on the reservation? What should its role be? In order to answer this, it was necessary to examine the social and cultural changes taking place today, and to predict trends of future development. This analysis demonstrated that social change was as inextricably bound to the education system as economic change is.

War and relocation damaged the social and cultural stability of nearly all the Indian tribes. Since relocation, Indians on the reservation have been exposed to the values, behavior, and technology of the mainstream society. The frequency and intensity of such contact has varied from reservation to reservation. Many Navajos, for example, have had little contact with whites until very recently; the Cherokees and the other "Civilized Tribes" in Oklahoma, on the other hand, have long had contact with whites.

The policy of assimilation, abandoned by the Bureau of Indian Affairs only in the 1930's, placed new social and economic demands on Indian cultures. As the frequency of contact with white society varied from reservation to reservation, so did the capacity of traditional cultures to adapt to the new demands. The hunting culture of the Sioux, for example, was singularly unable to make the transition to farming, ranching, and industrial work.

The result of these differences in contact and in response is that Indian reservations now display very diverse characteristics. Literacy rates range from 10 percent to 90 percent, and employment rates from 10 percent to 80 percent. However, nearly all the reservations are afflicted by the grave social problems of poverty, disease, unemployment, prejudice, inadequate schooling, and poor housing. The last of these is particularly widespread; 60,000 of the 80,000 houses on Indian reservations and trust lands are below minimum standards.

As reservation populations differ, so do the Indians within each reservation. Many older Indians have departed very little from traditional patterns of behavior. Many adolescents and young adults doubt the validity or relevance of tribal traditions, but at the same time, lack the skills or confidence to participate in non-Indian society; some remain subdued or passive, and are erratic as employees. Not enough is known about crime and alcoholism on the reservations, but they are generally agreed to be serious problems. For example, Indians constitute 30 percent of the prison population of South Dakota, although Indians comprise only 10 percent of the state's total population.

There are other, less violent, signs of social and cultural change on the reservations. Prestige is being redefined in terms of a man's education, occupation, and income, rather than by his age or ancestry, as has

been traditional. This process often results in a conflict of values between traditionalists and modernists, although neither faction respects the young man who "has an education but doesn't use it."

Young men often find that there are no jobs on the reservation to which the education they have received can be applied. Many young couples leave the communities of their parents in order to be nearer to places of work; this transfers to the mother and father much of the responsibility for raising children traditionally assigned to grandparents and other relatives. Often the father must in turn travel long distances or live in town to find work, leaving the mother with full responsibility for managing the household and caring for the children. This situation often results in the break-up of the family.

Even stable families are strained by conflicts of attitudes and views between young people and older people. The young become acculturated through the mass media while the old lag behind, so that local opinion is split on many issues. There is, however, no clear polarization of interests between young and old, as the young people display a broad variety of interests and aspirations.

Diversification of interests among the young requires a flexible and sympathetic response both from BIA schools and tribal institutions. A serious obstacle to such cooperation is the vicious circle of poor communication and lack of understanding among the schools, young people, and the tribal leaders. At this time, the principal contribution of the schools to cultural change is the replacement of Indian languages with English; this is by itself a doubtful blessing. Largely in spite of the schools "civilizing" policies, which they resent, young people develop new interests and apply pressure for change to their parents and tribal leaders. Tribal leaders, whose goals are similar to those of the young people, but who favor a more cautious approach to economic and cultural development, resent the impatience of the young. The tribal leaders, in turn, criticize the schools for "giving young people ideas;" this complaint further reinforces the schools' policy ot teaching not skills but citizenship.

Indian leaders realize that education can create unexpected problems, demands, and opportunities. For example, high school graduates

who want to leave the reservation in order to work or to receive additional training often resent their parents' desires that they stay at home and help on the farm or the ranch. Better educated young men and women tend to seek a wider range of consumer goods and cultural services than most reservations offer. To meet their needs, improvements will be needed in roads, public transportation, and in the dissemination of information through radio, television, and newsprint. An awareness of planning problems of this sort has generally been lacking in the tribes' two major planning efforts of recent years: the ten-year reservation development plans requested by the Secretary of the Interior in 1964, and the overall economic development plans drawn up by some reservations to qualify for the programs of the Economic Development Administration. In many cases, moreover, the advice and technical assistance offered by the BIA is of little help to tribal leaders, who often have difficulty understanding technical language.

Social change and conflict may be predicted and channeled. Rationally planned housing and industrial development projects, transportation systems, and the conservation of physcial and human resources are a few of the goals which progressive problem-solving Tribal Councils have achieved. For example, one cause of the difficulties of reservation and community management is that conflicts between traditionalists and modernists, between full-bloods and mixed-bloods, and among income groups often reinforce each other. Men with highly skilled jobs are likely to be of mixed blood, and modernists in their orientation, whereas men only sporadically employed are likely to be full-bloods with traditionalist leanings; there are, of course, many exceptions to this pattern. Conflict among income groups may be minimized through ongoing job training, job placement, adult basic education, and scholarship programs. It must be remembered, however, that real equality of opportunity, for those who lack job skills, is contingent on equality of ability. Persons with greater learning problems require a greater investment of effort.

A constructive use of traditional skills is possible through such projects as the renewal of Indian villages and ceremonial sites and the

establishment of institutes for the study of Indian culture and Indian modernization. Traditionalist parents can also perform services, as at Rough Rock, where they serve as teacher aides and dormitory aides.

Tribal politics has usually focused on ideological disputes between traditionalists and modernists, and between full-bloods and mixed-bloods, rather than on concrete problems and issues. A serious obstacle to solving the common problems of chronic underemployment, poor health, and poor housing has been these disputes over the retention or abandonment of such specific elements of tribal culture as tribal languages, dress, lore, and customs. Abt Associates Inc. staff members found that Indians, both adolescent and adult, were concerned principally with maintaining such traditional bases of Indian interpersonal relations as a low level of competitiveness, a high level of cooperation, and a system of child-rearing based on the child's acceptance of progressively more responsibility. The more physcial aspects of tribal culture, such as styles of housing, dress, tools, furnishings, and in some cases, even the tribal language, were considered less critical.

Indian culture was not a salient issue among the majority of the students interviewed by Abt Associates staff members. Teachers seemed much more attached to the unrealistic notion that the Indian student faces an all-or-nothing choice of giving up his Indianness or being denied the benefits of white society.

Assimilation is not inevitable. Nor, however, is total "Indianism" the answer to the urgent social and economic needs of the reservations, where 75 percent of Indian families have annual incomes below the "poverty line" of $3,000.

Indian students are aware of these problems, as indicated by the low priority they placed on teaching more Indian culture in BIA schools. Some Indian students expressed a desire to effect change on the reservation as social workers or entrepreneurs. The needs of these students are not being met by the educational system. It is necessary that BIA schools recognize their role as agents of social and cultural change, and take steps to redefine that role where necessary.

In many cases the school has challenged such values, taught to the Indian child by his parents and peers, as strict definition of sex roles and determination of status by personal courage or social tact. In substituting the goals and values of the broader American society for traditional values and goals, the schools have often left the Indian child unequipped with the training and skills necessary to achieve these new goals. This contributes to poor academic performance, and to high dropout, unemployment, and migration levels.

The BIA school has, then, been an agent of social and cultural change, in some cases to the student's disadvantage. The school should be designed specifically to investigate and encourage constructive change. Courses should explore both mainstream and tribal behavior and values, to encourage the Indian child to become aware of the cultural options open to him.

The BIA school can serve in part as a training center for the planning of social change, through instruction in the local application of social science and other appropriate techniques, and by supporting and helping to coordinate community activities. Most Indian adolescents claim to have undergone a change of values but are often unable to articulate specific goals and programs; the schools should therefore emphasize the discovery and development of social, economic, and political problem-solving techniques intheir curriculum. Students in a rapidly changing social system will want and need a flexible, adaptable course of study. Such programs as a self-help housing project or a job training center must be subject to continuing evaluation and improvement, if they are to be of lasting benefit to the reservation. Indian students have expressed their desire to plan and control social and cultural change on the reservation. It is the task of the BIA school to develop the skills they will need to accomplish this.

The common social problems of family instability, poor health, inadequate housing, alcoholism, and underemployment are today almost unaffected by educational programs. The schools continue their well-meant but irrelevant training for a middle-class off-reservation life that is not economically or socially accessible to the student. Major improvements in school curricula instruction, adult community involvement and cooperation with such agencies as the Division of Indian Health and Law and Order are needed, before the schools can play a truly constructive role in social and cultural change.

Chapter IV

Interpretations and Conclusions of the Systems Analysis

The systems analysis revealed a multitude of causes of the low level of student performance in BIA schools. These causes may be divided into three major categories: socio-economic factors adversely affecting Indian students; problems related to the status of the BIA within the Federal Government; and problems of the BIA educational system itself. All are, to some extent, interdependent. It is likely, therefore, that the improvement of the educational process within the BIA system will help to mitigate some of these problems (such as student diffidence and inadequate Congressional appropriations) which are less directly within the power of the BIA to affect.

The importance of socio-economic factors in educational achievement was clearly shown by Coleman in the study of the Equality of Educational Opportunity.[1] In many Indian tribes, this predominantly economic disparity between home and school is compounded by strains resulting from the school's attempts at acculturation. Embarrassment about his cultural heritage or his difficulties in the use of English often create in a child feelings of inferiority which can prevent productive relationships with other students and with teachers. This is one of the major causes of the low level of effective interaction in the classroom.

For similar reasons, drop-out rates are quite high. First, the lack of professional or semi-professional role models (other than BIA personnel) and of well-paying jobs on the reservation reduces student motivation to stay in school. This is in part responsible for the high drop-out rate in the eighth, ninth, and tenth grades. In addition, this is the level of schooling reached by most Indian parents. Parents often feel that children need no more education than they themselves received. Even when this is not the case, some students do not wish to surpass their parents in level of educational achievement.

Lastly, many Indians find their state of dependency upon the BIA psychologically very comfortable. They have become reliant upon

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[1] James S. Coleman, Equality of Educational Opportunities, United States Government Printing Office, 1966.

the distribution of surplus commodities, on free medical and dental care, and on the assumption by others of the responsibility for making decisions. Many complain about the state of education in the BIA schools, while evincing no interest in taking any part in their governance. The present inadequacy of the BIA schools provides a form of security for some Indians, as it provides the justification for continuing a life of dependence on the BIA. Teachers in the BIA system use the dependency and low motivation of Indians as the justification of their own inadequacy, thus perpetuating the cycle.

The basic alienation (or "anomie") which underlies this is described succinctly in The Sisseton Indians.[1] However, Bickert does not state whether he believes that this is, in many cases, a position of security and comfort. The systems analysis has also demonstrated that "normlessness" is found among the Indians of most, if not more tribes, than the Sisseton Sioux and helps a great deal to explain the lack of classroom initiative on the part of the students observed.

A note should be added here on the socio-economic factors affecting BIA school staff. The two principal constraints on attracting and holding good teachers are the physical isolation of most posts and the monthly salaries paid to civil servant teachers for a full year's term of service. While the GS-7 salary offered to beginning teachers is comparable to salaries in most public schools, the twelve-month term prevents BIA teachers from supplementing their earnings with summer employment, as do many public school teachers. The teachers also appear to be personally frustrated by "the system" and by the reticence of their children over neither of which they are able to exercise much direct control. The shyness of most Indian children, and the usually covert hostility of some, prevents teachers from obtaining readily the reinforcement they have been trained to expect. It is rare for children to smile, offer information, or ask questions in the presence of their teachers. As a result, the teacher often questions his value to the children.

Not only does the BIA school have to deal with these extraneous problems, but it must also operate within the regulations of an administrative structure that is not geared to running schools that operate for

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[1] Carl Von E. Bickert, The Sisseton Indians: A Socio-Psychological Study of the Indians on the Sisseton Reservation, Denver Research Institute, Denver, 1965, pp. 35-39.

only nine months of the year. The exact appropriations for the fiscal year are usually not known until as late as October, so that it is impossible to make plans during the summer for operations in the coming year. In addition, funds are not available on a local level to deal with unforeseen needs or crises.

The teachers' ability to rely on their civil service tenure militates against the total commitment needed from them. They tend instead to provide the service, 8 a.m. to 5 p.m., five days a week, twelve months a year, for which they are paid, and to take little interest in the problems of the school and the community. For instance, in one pueblo where the schhol was located in the village and the cahnces for significant integration into the community were therefore good, teachers demanded compensatory time off, as regulations provided, for evening participation in community activities. A more flexible system would permit committed teachers to work longer hours during the school term in return for long summer vacations in which to do as they pleased.

BIA staff also find the lack of financial control a crippling barrier to providing their students with an effective education. Centrally determined purchasing policies often prevent the initiation of locally needed programs, thereby frustrating and embittering many staff members. One young married couple, placed in a very isolated post, stated that they were resigning from the BIA system because of this lack of operational flexibility. Although they were accurate in their explanation of the financial system, they did not realize the extent to which the Education Division lack financial independence. Education does not do its own purchasing: maintenance is handled by the Division of Engineering, and health services are provided by the Public Health Service, a division of the Department of Health, Education, and Welfare.

Within the schools themselves, the quality of the staff and the curriculum are inadequate to deal with the problems created by the extraneous impediments to high academic standards, to high college and job placement, and to high program cost-effectiveness. Facilities and equipment, while not ideal, do not currently constitute a serious problem, except in the case of dormitories.

The disparity in goals between students and staff attests to the failure of most schools to establish a suitable climate for productive student-staff interaction. The two groups are not working together. In most cases, they have not established communications adequate for a consensus about goals to emerge. Further evidence of this distance between the two groups was provided by the classroom observations. The general lack of pupil and teacher enthusiasm, the monotony and repetitiveness of the activities, and the irrelevance of most class material are a cause and an effect of the present low levels of student and teacher performance.

An area of concern which has received great attention recently[1] is the performance of guidance, supervision, and counseling functions in the dormitories. As the BIA report on Chilocco shows, the most harmful present practice seems to be the maltreatment of uncooperative students. This mishandling of students is perhaps best explained (although, of course, not excused) by the comments made by numerous staff members in decrying their lack of training in dealing with the serious emotional problems of many students. The high ratio of students to counselors, especially at night, is a further cause of these instances of improper discipline.

The students' own statements help to complete this description, and to suggest additional areas for change. They frequently complained to the analysts of the many unreasonable restrictions on their personal freedom, and of the inadequacy of the activities provided for them. These two factors help to explain the frequency of illicit drinking, drug use, and sexual activity, and of other forms of misbehavior. The students' basic complaint, which the analysts observed to be valid, is that staff deals inappropriately with the students. The organization of the staff of boarding schools is poor. The dormitory is supposed to be "home," and the staffs of the dormitory and of the school do not mix. The students are thus able to play the teachers off against the counselors, knowing that the

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[1] Congressional Record - Extensions of Remarks, April 3, 1969, "The Infliction of Torture at Chilocco Indian Boarding School," pp. E2723-E2725.

lack of communication between the two groups will protect them. Not only is there no positive coordination of activities, but even punitive measures, which are a major concern of many teachers and counselors, are not effectively handled.

In the dormitories, the inadequacy of student guidance is heightened by the many other demands on the guidance counselor's time. Since the majority of the dormitory personnel are responsible for building maintenacne and for punishment, as well as for guidance, it is hardly surprising that students rarely confide in them. They must see that floors are mopped, rooms neat, and misbehavior punished. At the same time, each one is expected to be like a father or mother to one hundred or more boys or girls, and to provide them with the love and attention they would receive at home. This task, impossible even for the best-trained counselor, is usually assigned to untrained persons. Some have personal problems of their own which manifest themselves in the disregard or mistreatment of students.

In summary, the systems analysis of BIA schools concludes that while many of the problems of the schools are determined by forces beyond their control, the existing staff is inadequate, in quality and quantity, to deal with them effectively. BIA personnel, from administrators to dormitory staff, frequently neglect their responsibilities and take no individual initiative, either from frustration or cynicism. Many of the most capable personnel resign from the system after a short term of service. A few dedicated persons continue to exert themselves, in the hope that some Indian children will be benefited by their efforts.

The analysis further concludes that the schools fail to take into account the socio-economic factors which impede the child's ability to learn in school. Integrated development plans for the social, economic, and educational needs of the community are lacking. The schools generally take little interest in the community; what change does occur in the community is usually unrelated to the school's activities. In the following chapter, plans and programs for the allocation of the problems described above will be discussed.

SECTION II

Alternative Plans and Programs Development

Chapter V

Program Objectives

The objective concerned with this phase of the effort , the development of alternative plans and programs,has been to respond creatively to the problems identified in the first phase of systems analysis. Problems were defined as discrepancies between the preferences of such participating groups as students, parents, and teachers, and the realities of current educational operations. Programs are defined as projects intended to reduce or eliminate specific problems; plans are defined as descriptions of such programs in terms of:

- problem to which response is being made
- concept
- description of pilot and fully operational programs
- research and development, testing, and implementation
- schedules for pilot and operational programs
- cost estimates for pilot and operational programs
- estimate of probable results

The objectives of the programs are to respond to the specific problems previously identified. All tend to fall into categories of educational, economic, socio-cultural, and administrative improvements.

The programs have been designed for initial pilot implementation, as practical tests of feasibility and usefulness. Most of the programs are sufficiently complex that without concrete experimentation, predictions of effectiveness, although possible through the use of the cost-effectiveness models described below, are hazardous.

The pilot programs were designed to uncover, at modest cost, most of the possible flaws in the programs, in a few situations representative of the broad range of conditions.

Education Program Objectives

The education programs may be classified according to whether they are concerned with curricula, teachers, facilities (including dormitories), equipment, dormitory staff, or general administration. The main objectives of curricular programs were to make content more relevant to Indian students' life experiences and interests, and to make the forms of presentation more lucid, stimulating, and motivating. Substantive content was designed to be relevant both to current Indian reservation culture and to the current occupational aspirations of Indian students. Since some three quarters of the Indian students surveyed indicated an interest in college education, curricula had therefore to emphasize college-preparatory material.

Another major aim of curricular programs was to increase the level of BIA schools' academic standards, at present so low as to arouse the frequent complaints of BIA students. The major deficiency of curricula in this regard was found to be in teaching abstract analytic and synthetic reasoning. Since these types of mental activities are best learned with interesting and, at least initially, familiar materials, the need to develop curricula of student-preceived relevance and motivational effectiveness is all the more pressing.

The objectives of those programs directly concerning teachers were designed with the intention of improving the quality of instruction and raising academic standards. Alternative (and complementary) approaches include methods for the better recruitment and selection of teacher candidates, for preparatory and in-service orientation and training, and improved supervision and counseling of teachers.

The objectives of the programs for the improvement of facilities were to make them practical, exciting, and pleasant for the students. Dormitory facilities in particular are too cramped to permit students to study efficiently, and are sometimes unnecessarily "institutional" and barren.

The dispersion of many Indian populations, both on and off reservations, suggests that mobile facilities might be useful. These would also help to reduce the geographic and cultural isolation of many Indians.

One alternative to mobile facilities is to link many small facilities electronically; this would have the added benefit of increasing cross-cultural communication. The improvement of equipment was, however, considered subordinate in importance to the objectives of bettering curricula and instruction.

The dormitories were found to be of general physical adequacy, despite some overcrowding; the inadequacy of their attention to students' social requirements and counseling needs, however, indicated that improved guidance, counseling, and activity programs were needed to reduce the students' boredom and the consequent temptation to drink and commit other forms of misbehavior.

The objectives of the programs relating to general administration were to improve the matching of authority and responsibility; it is possible that granting increased control over hiring, budgets, and school policy to local Indian communities and school officials would achieve this goal. The principle of local control is necessarily concomitant with the participation of local adult Indians in the affairs of the school; both are desirable goals, toward which the Bureau should direct its efforts.

Economic Objectives

The economic objectives of the various programs and plans developed concentrated almost entirely on reservation development. The most obvious and basic problem of the reservation economics is unemployment (averaging fifty percent and cometimes exceeding eighty percent) and underemployment.

Reservation unemployment is the result of the remoteness of rural locations; of natural resources often meager or inaccessible; of a widespread lack of employable skills among the residents; of poor communications and services; and of political factionalism. All of these conditions tend to discourage investment in reservation enterprises; to varying degrees, all must probably be remedied before reservation development can proceed on a large scale.

Unemployment also results in low levels of income, savings, and living standards, and in a general climate of economic despair that induces many of the most ambitious and promising youth to seek employment in the cities. The human capital of the reservations is thus constantly depleted, and the cycle of rural poverty continued.

The one resource all reservations possess in great quantity is unskilled manpower. Labor intensive industries tending to incure relatively low transportation and service costs are therefore most suited for reservation development. To attract this kind of labor intensive industry, the cost of labor must be sufficiently low, and its quality sufficiently high, to offset the higher costs of transportation and services. The objectives of the economic development programs have therefore been to reduce by subsidies the probable labor costs to prospective reservation industries; to increase through education the quality of labor; and to stimulate local entrepreneurship to attract and utilize investment resources off the reservation.

Socio-Cultural Objectives

The major social and cultural problems of Indian education are cultural isolation, due to physical isolation and social prejudice; social disorganization, the result of geographic dispersion, poverty, and conflicts between generations and clans and a widespread confusion among Indian students as to the various cultural identities from which they may choose. It is this last dilemma which tends to destroy the self-confidence of the Indian student and stifle his academic, social, and personal development.

The objectives of the programs developed in response to these problems are therefore of three kinds: the reduction of students' cultural isolation, by exposing them to the patterns of thought and behavior of a variety of cultures, including their own; the fostering of social organization, family solidarity, and harmony between different age and clan groups; and the presentation to students of the characteristics of the all-Indian, bi-cultural, and "mainstream American" cultural identities from which they will ultimately choose their own way of life.

The objective of reducing cultural isolation is by no means intended to imply a desire to weaken the unique character of Indian culture. Exposure to cultural alternatives is implicit in all education; the firm assertion of one type of cultural identity necessarily entails the consideration and rejection of other. There is, of course, the possibility that exposure to other cultures may initially weaken the Indian student's sense of cultural identity; in the long run, however, this exposure is essential to the development of a firmly grounded cultural identity of any kind.

American society has, in recent years, become increasingly multi-cultural. The nation's schools must therefore prepare students to understand the needs and behavior of persons of a variety of cultures. Urban life in particular demands this knowledge and sensitivity. If Indian children are to have equal educational opportunities to compete in contemporary (particularly urban) civilization, they must not be educated in isolation from the other cultures which make up American society.

The reduction of cultural isolation requires more than instruction in English and the standard core curriculum. It requires exposure to the many occupational, social, and physical aspects of life in different cultures. A specific aim of several proposed educational programs in curriculum development, instruction, and facilities is to amplify and diversify this type of multi-cultural exposure.

The objective of increased social organization is essential to progress in political and economic development. The generational and factional conflicts now dividing many Indian communities delay decision-making on urgent issues, divert energies into futile quarrels, and often damage greavely the inherently weak structure of community and family ties. Improvement of the social organization and solidarity of Indian communities can be expected to ameliorate such symptoms of social pathology as family breakdown, alcoholism, crime, and indigency.

The aim of offering to all Indian students the full range of cultural identity options, from total assimilation through bi-culturalism to a totally traditional mode of life, is intended to provide the students with the opportunity to decide as to the nature of the cultural identity they wish for themselves. The school can prescribe, of course, no "right"

or "wrong" culture. The aim of making available the full range of cultural identities places the control over this choice of life style where it belongs, in the hands of the individual, rather than with any group or organization. For this freedom of choice to be genuine, students must be exposed to the several alternatives in a manner free from any bias. A number of educational programs have been generated specifically to meet this goal, which is reinforced and furthered by those programs developed to mitigate the students' cultural isolation.

Administrative Objectives

The education systems analysis of administrative problems found that administrators were usually overloaded with paper work and that this was in part responsible for generally inadequate training and supervision of subordinate personnel. It found also that resources are frequently allocated badly, on the local level, because the decisions have been made by higher-level administrators who are insufficiently familiar with local problems and requirements. For the same reason, administrative response to local educational problems is often belated or inappropriate. There is, moreover, at the local and regional levels, almost no awareness or employment of modern management planning techniques; administrative decisions are made without the participation of the people who will be affected by them, and only at the highest levels of administration is any educational research and development conducted.

In summation, then, three major problems were identified: administrators frequently do not have access to information essential to effective decision-making; they are usually unaware of modern techniques for utilizing what information is available; and they often lack the time and ability to implement those appropriate decisions which are made.

The general objective of the administrative plans and programs formulated by Abt Associates Inc., has been to remedy these three major deficiencies of the system. This is to be accomplished, in the first place, by providing the management information, and the training necessary for its effective utilization, to administrators at all levels. It is further to be accomplished by providing means for increasing the flexibility of the entire organization in implementing administrative decisions in the areas of planning, logistics, operations, finance, and personnel.

Program Generation Methods

Throughout the course of field work and data analysis, Abt Associates staff members discussed programs informally. Early in December, the entire research staff met for two days to generate programs for sixteen major problem areas (see Seventh Monthly Progress Report). Ideas were proposed in turn and discussed critically and considerately by members of the educational and economic field teams and the Management Information Systems group. Specialists in various skills and disciplines asked questions and offered suggestions and refinements from their professional experience or particular fields of knowledge.

When the original ideas had been thoroughly discussed and amended, they were distributed among the staff members to be further developed, costed and drafted as pilot and operational programs. A standardized format was used to avoid duplication and provide continuity.

Meetings were then held, at which the detailed program descriptions were reviewed and evaluated for cost effectiveness. After necessary alterations were made, about one hundred programs were formally drafted and presented to the BIA in the December Monthly Report.

Throughout January the teams continued to develop ideas individually; this effort was informal and uncoordinated. However, these were reviewed and culled at weekly meetings, and promising proposals were developed and added to the main body.

Chapter VI

Education Programs

Curriculum Development

The typical academic pattern of pupils in the Bureau of Indian Affairs schools has already been described at length in this report: children who show great promise in the primary grades, and may even surpass national achievement averages, become silent and listless in the later elementary grades, fall further below national averages each year, and ultimately drop out of school before graduation. This is not, of course, the history of every student; nonetheless, dropout rates in BIA schools are, as far as can be determined, higher than in the public schools of any state. Tragically few of those students who graduate from BIA schools go on to complete college.

The reasons for this disturbing phenomenon are varied. It is clearly not attributable to any deficiency of intelligence on the part of the students. Teachers have, however, complained of their students' unwillingness to learn, and psychologists have noted a strong sense of solidarity among Indian students, who will often prefer to seem ignorant than to outshine their classmates. Both these observations are reflections more upon the quality of instruction than on the ability of the students to be taught. It must be the responsibility of the school to take into account the background of the student; although it is certainly desirable that the school prepare the Indian child for life in a large city as well as on a reservation, this is not necessarily to be achieved by using instructional materials and techniques appropriate for urban children.

The Indian student, like any other, must be motivated to learn. His courses must interest him; they must place appropriate demands on his abilities; they must be of utility apparent to him; and they must be relevant to his culture and its way of life. The analysts conducted extensive research into the curriculum needs of Indian pupils. On the

basis of data collected and of numerous personal interviews with students, it is their opinion that the critical element in the effectiveness of curriculum materials is their relevance to the student's own culture. These findings are borne out by numerous studies into the educational needs of minority group children.

The desires and preferences of schoolchildren are clearly not the sole determinant of the contents of school curricula; nor should they be. But the students' preferences should under no circumstances be ignored; one of the basic requirements of student achievement is motivation. The level of motivation determines as well the trade-offs between any two quantities, such as achievement and entertainment, or scope and depth, which tend to be mutually exclusive. Where motivation is extremely low, children can neither achieve nor be entertained; where motivation is moderate, the levels of achievement and entertainment may both be moderate, or one may be high and the other low; but where motivation is extremely high, the levels of both achievement and entertainment will be high. ("Scope of instruction" and "depth of instruction", or other pairs of factors, could be used in place of "achievement" and "entertainment" in the above description.)

It is not enough, then, that the school provide instruction; it is its responsibility also that children be sufficiently motivated to receive, retain, and profit by instruction.

BIA teachers are often criticized for their lack of understanding of the needs and desires of their pupils; it must be remembered, however, that inappropriate curriculum materials often determine students' preceptions of their schools and teachers, and also determine to a great extend the teacher's understanding of her role. For example, elementary school readers which center upon a white suburban family may seem to be

helpful in acquainting the Indian pupil with the mainstream American culture, but may be harmful in two ways to the learning process. The Indian child may feel that the suburban family is being presented to him as a model for emulation; from resentment or boredom, he may fail to learn what is expected of him. The teacher, on the other hand, may consider the textbook to be an indication that her primary duty is to socialize, rather than to educate, her pupils. Student resistance to the materials may simply emphasize to the teacher how different her students are from the "model" children depicted in the textbook. In such ways, a vicious circle of resentment and disappointment can arise between students and their teachers.

The positive effect of curriculum materials relevant to Indians cannot be stressed too highly. The Indian pupil enters school already burdened by a cultural history of Indian despair and defeat at the hands of whites. Curricula which acknowledge, and do not derogate, the Indian culture, can help offset this basic disadvantage. Assimilation into the broader culture of America can only be achieved by allowing the student to value his own culture as well; the student may otherwise reject the broader culture, and despise his own.

Curriculum materials must, then, attempt to foster the integration, in the students' consciousness, of the Indian and mainstream cultures. This is not, however, to be achieved by the development of an ethnocentric "Indian" curriculum, as some well-meaning persons have proposed. Such a curriculum would be a mistake for several reasons. In the first place, students might feel, probably with some justification, that the curriculum was condescending to them, and helping to perpetuate their separation from the mainstream culture. Perhaps more important, it might neglect to teach students the knowledge they will need for success in both societies.

The solution, then, is neither to ignore the culture f Indian America nor to make it the sole subject of study. Instead, curriculum materials should constantly draw parallels, or allow parallels to be drawn, between analogous situations in different cultures. It is extremely important also that different courses of study be integrated as much as possible with one another, particularly in the early grades; reading and social studies instruction might be combined, for instance, so as to use teacher and student time most efficiently.

Abt Associates, Inc., has, therefore, designed for this report a Curriculum Evaluation Model (cf. Vol. IV, pp. 101-123) by which various curriculum materials may be evaluated according to their coverage, appropriateness, motivational effectiveness, and cost. The model is designed to help in the selection of new materials and in the determination of the most and least effective portions of existing materials.

The analysts have also formulated a basic outline for the development of new curricula in the four basic disciplines of language arts, social studies, science, and mathematics. This outline consists of designs for the primary, elementary, junior high, and senior high school level. In addition, sample social studies courses and science curriculum units have been included to illustrate the method of heavy reliance on material of Indian relevance and analogical potential, which is to be used throughout the curriculum design. It will be noted that these curricula are designed so that study in each subject progresses according to logical sequence from grade to grade, and so that in each grade, study in all four subjects is related as much as possible. It must be recognized that mathematics is less easily made specifically relevant to Indians than the other subjects considered. It is useful now to consider these curriculum designs in detail.

In the primary grades, Indian children display a great variation of fluency in the English language; while a child on a Plains reservation may be fully fluent at the age of six, a Navajo child of the same age may speak no English whatever. The primary grade curricula in all four subjects recognize this reality. The emphasis of the language arts curriculum is, therefore, focussed primarily on the development of oral fluency. The child is to be presented with speech in a variety of forms: he is to listen to tape recordings of his own voice, as well as those of others; he is to hear the spoken voice on the radio and records as well. Numerous games are also to be employed. Some require communication from student to student, such as the simple "whisper down the alley". In others, students are to represent in pantomine, objects, sounds, ideas, and animals. The techniques of word "giving" and "owning", devised and used with great success by Sylvia Ashton Warner in her work with Maori children in New Zealand, is also to be used: children, if they wish, ask the teacher for specific words that interest them; each child begins to accumulate a collection of placards on which are lettered the words he has requested. For the benefit of both students and teachers, it is desirable that they exchange Indian and English words. The child must be made to feel that he has something to offer; the teacher, that she has something to learn.

The primary social studies program is to be taught similarly; a high degree of emphasis on visual materials, films, games, and role plays permits the teacher to use written materials to a degree appropriate to the students' ability to comprehend them. In all cases, the written word is to provide for students a way of helping to satisfy the curiosity and interest stimulated by those methods which appear to the students to be simply entertainment. The focus of study in these grades is to be

behavior, animal and human. Students are to consider the needs, responsibilities, and circumstances which dictate behavior. They are to be encouraged by role-plays to take the parts of animals; in this unthreatening way, they can represent, and thereby understand better, processes of human behavior. Students are to examine in turn purely personal behavior, the interaction of parents and children, interaction within a peer group, and interaction within a community. Unfinished stories and films give students the opportunity to predict characters' behavior; in so doing, they project and comprehend their own behavior patterns and the motivations for their actions. The theme of conflicting obligations and expectations, a subject of particular relevance to the Indian child, is to underly the material; as he examines this question, in relation to family situations in other cultures, his personal as well as academic problem-solving capacity will be developed.

The primary science curriculum is to concern itself principally with ecology. Students are to examine the ways in which various species interact with each other and with their environment, though a variety of teaching methods. Students are to play the roles of animals in examinations of species differences and food chains. Hunting, tracking, and bird call games are also to be used. Students are to study different kinds of environments by field trips and the observation of aquaria, terreria, and their own greenhouses. Science instruction is to be associated with the teaching of mathematics, which is to focus, in the primary grades, on concepts of time, space, shape, size, and numbers.

In the intermediate (fourth through sixth) grades, each of the board areas of study treated in the primary grades is to be considered at a higher level of sophistication. Where language arts focussed on oral skills in the primary grades, reading and writing skills are now to be stressed; where

the social studies program dealt with patterns of behavior, it is now to consider social and cultural change; where the science program consisted of the observation of natural phenomena, it is now to consider the origins of these same phenomena; and the mathematics curriculum is to deal with the allocation of resources and the bases of different number systems, as well as with the improveme nt of arithmetic skills.

More specifically, the language arts program is to include a wide variety of opportunities for writing by students, such as the production of a newspaper, the creation of imaginary dialogues and letters, and the production of humorous, autobiographical, insulting, and other types of themes. As in earlier grades, the curriculum is to attempt first to foster students' desires to express themselves, and then to provide them with the means for such expression.

The social studies program in the fourth through sixth grades is to consider the impact of change on various groups at various times; whether consciously or unconsciously, students are to see analogies between the material they are studying and their own experiences, or those of their tribe. Among the case studies to be treated are the effect of mass communications media on life in a village of an underdeveloped country; of the slave trade on African tribal life in the seventeenth century, and of the Roman occupation of Palestine on the Jews of Biblical times. Students are to play the roles of various individuals in games and simulations.

The intermediate science curriculum is to consider the origin of natural phenomena from several standpoints. Indian and other primitive magical explanantions of the origins of the solar system, of life, and of distinct species are to be contrasted; the development of Western scientific thinking is then to be traced. Evolution, genetics, and elementary education about human reproduction are to be taught; the

pressing need for instruction in the last of these fields is indicated both by the disturbing statistics on juvenile pregnancies among BIA students and by the recurrent urgings of interviewed BIA teachers. Instruction in ecology and animal behavior is to continue.

At the junior high level, the themes developed in preceding grades are to be expanded still further. In language arts, the skills of speaking, reading, and writing are to be applied to a consideration of literary forms; students are to read and write in the forms appropriate to various situations and purposes. The social studies curriculum, devoted at the intermediate level to social and cultural change, is to consider in detail the problems of individuals, present and past, as they attempt to find solutions to "binds" in which they find themselves. Economic, political, and sociological problems, as well as personal choices, are to be treated. The science curriculum, having dealt at the intermediate level with the origins of natural phenomena, is to consider the adjustments which animals and men make in their environment to suit their needs, and the alterations they make in their own behavior and requirements to suit their environment. The similarities between naturally evolved structures in living things, and man's technological advances, will be stressed. In the field of mathematics, as well, skills acquired earlier are to be applied to solve probelms of engineering by the use of algebra and geometry.

At the senior high school level, it is of the utmost importance that the curriculum contain a proper mixture of highly entertaining and highly useful courses, so that students may be deterred from dropping out before graduation. Attractive courses should also form a "reward" for those who remain in school. In each field, therefore, the curriculum is to treat topics which recapitulate, synthesize, and go beyond the major areas of study of the previous three levels. In language arts, therefore,

students will consider the content and technology of communications; they will not only learn the techniques of such media as film, but also study the content, applications, and effects of various forms of communication. In the field of social studies, teams of students are to work competitively devising solutions to political, economic, sociological, and psychological problems of relevance to Indians: the establishment of bantustans in South Africa is one such problem, the economics of desert land use in the Near East another. The science curriculum is to involve at once the observation, origins, and alteration of natural phenomena. Students are to examine, for instance, myth, magic, and dream interpretation; methods of ecological and population control; aeronautics; rocketry; and the traditional subjects of chemistry and physics. The mathematics curriculum is to include computer education, statistics, and probability, subjects of practical value as well as of interest to the student.

A well-integrated, comprehensive curriculum can, therefore, be developed to serve the present and future pupils of BIA schools. The cost of developing first through twelfth grade curricula for each of the four subjects would be high; it must be asked, however, whether the Bureau of Indian Affairs or the nation can in the long run afford the waste of human and financial resources which continued inadequate instruction of Indian pupils would foster.

Recruitment, Selection, and Training of Teachers

Abt Associates Inc. has made numerous recommendations to improve the recruiting and selection processes for BIA school teachers and the training they are provided to deal with the complex problems of cross-cultural education. Among the suggestions are changes in the control organization and staffing of recruiting agencies, formal recruiting procedures and definite selection criteria for applicants. In addition, the recommendations attempt to deal with the problems which teachers face when they begin work at a Bureau school.

Organization

The centralizing in Albuquerque of recruiting responsibility has not allowed more efficient operation. The relationship with the Washington office and the removal of all activity from the area offices has further separated this function from the Education Division. The responsibility for recruiting should be less rigidly divided between Administrative and Education Divisions of the Bureau. If the central recruiting office were directly responsible to the Education Division and could supply forms and train interviewers from each area (such as senior teachers and school principals), they could visit colleges in their area to recruit prospective teachers and forward the necessary data to Albuquerque for processing and filing. This would cut down the load on the Central Office recruiters by approximately one-half and allow them sufficient time to evaluate and interview newly hired teachers. This closer coordination with the Washington Office and with field people would add to this a greater coherence in recruiting policies, goals, and methods.

The central Recruiting Office should continue to process the data for all applicants, and its field staff should continue to make presentations at colleges outside the reservation areas. If an area office has not fulfilled its recruitment needs by the beginning of April, the central office should provide assistance. This could be accomplished by a pool of interviewed applicants and transfer applicants from other areas. Because understaffed schools would compete for applicants from the central office pool, they would be encouraged to improve conditions at their schools.

The best principals and students should participate in recruitment and education of non-education majors at first-rate universities. They should seek prospective teachers with high general knowledge, evidence of initiative, warmth and empathy, and high achievement in one academic discipline. Concentrators in fields relating to cross-cultural problems should be particularly solicited. The principal and student interviewers would be selected and trained and would assist in formulating detailed teacher selection criteria. They should plan their interview

schedules with colleges located in or near major Bureau areas and attempt to recruit teachers for all BIA schools, at all grade levels. The estimated costs for a pilot project of this type are approximately $237,300. The project would include recruiting fifty teachers for approximately twenty elementary schools and ten high schools.

A Student Teacher Training Program should be set up at colleges and universities located near BIA schools. Such programs could be instituted at: University of Nevada (Stewart Indian School), Arizona State University (Phoenix Indian School), University of New Mexico (Albuquerque Indian School), University of Kansas (Haskell), and others. College students (especially Indian students) would serve as part time teachers, counselors and tutors while pursuing their undergraduate studies at the university. They would be offered a stipend, increased at the end of each term during which they participate in the program. This financial incentive might be offered in the form of scholarships to encourage Indian students to stay in school. Academic credit could also be offered through special programs at colleges and universities. After graduation, successful participants would be offered immediate employment in the BIA school system as teachers, counselors or administrators. Since transportation to and from the Indian schools might pose difficulties for undergraduates, each student teacher could be allowed travel expenses. Such a program, involving about thirty-six participants at six universities (six per school), would cost approximately $130,000.

Many Indian parents and students resent the fact that few of their teachers are Indians. An Indian Teachers Recruitment Program would seek permission from area colleges to allow Indian education concentrators to fufill their student-teaching requirement at Bureau schools. Indian adolescents should be taught by Indian teachers, who are more familiar with their problems and better equipped to deal with them. Indian teachers would also serve as models to demonstrate to parents and students the rewards and advantages of education.

If possible, Indian teachers should be assigned to BIA schools in their home districts. They will be known and trusted by the community and have valuable contacts with residents and tribal leaders. A pilot project of this type, to include 100 participants, would cost approximately $46,000.

In order to increase its contacts and sources for recruitment, the Teacher Recruitment Office should undertake a public relations campaign similar to that of the Peace Corps. Publicity should be distributed to the general public as well as in specific areas where recruits are actively sought. Such a program would help open college doors to BIA recruiters and serve as a means to inform the public about the Bureau's work.

Public media might also attract the large group of young people trained in education but not teaching. Appropriate media include press releases and magazine articles, television and radio spots (similar to the Peace Corps' advertising announcements), documentary films (such as those now being prepared for the BIA by Abt Associates Inc.) and nationally publicized contests and scholarship competitions. Such an effort to change the public image of Indian education, carried on at a national level and concentrated in particular regions, would cost approximately $100,000. This includes the expense of publishing costs, planning, writing and selection of media.

The materials which BIA recruiters present at college talks and interviews should be designed to emphasize the Bureau's role and objectives, the challenge of Indian teaching for professional educators, the lack of understanding which prevails throughout most of our society regarding Indians and their culture and the professional advantages and rigors of teaching in the BIA schools. Language barriers, and means of overcoming them, should also be discussed.

As a further aid to recruitment, the summer workshop program should be expanded to include more non-BIA teachers, and all participants should be provided with well-designed and comprehensive materials for their own reference and to distribute among interested friends.

Highly qualified teachers would also be attracted by the offer of high salaries and other benefits. In Progress Report Number Six, Abt Associates Inc. compared the maximum and minimum salaries offered by BIA schools to those offered by public school systems. It was found that BIA teachers' salaries are neither extremely high or low. The findings of this analysis were obscured, however, by three primary factors. First, BIA instructors are paid on a twelve-month basis; public school teachers contract for nine-months' service. Although their annual pay rates are identical, the BIA teacher earns less per month and cannot supplement his earnings with a summer job. Second, Civil Service status provides more security for BIA teachers than public school systems afford. Finally, the small public school systems which are located near Bureau schools pay relatively low salaries ($4,000 to $7,000 per year).

If the BIA wishes to overcome its recruiting problems and convince quantities of good teachers to move long distances from their home states, it must provide a more attractive financial offer. Present BIA salaries will not by themselves attract potential teachers and, in more high-paying regions of the country, this factor may actually hamper the Bureau's recruitment efforts.

Teachers should be hired at grade GS9 to compensate for the dispersal of pay over a longer period and three months' summer work. However, the promotion to a higher grade which now comes, almost automatically, at the end of the first successful year should be replaced by the standard graded salary scale. This would allow teachers to apply for promotion or wait for a formal review after three years or so. Salary consideration should be given both to incoming and on-job teachers who hold advanced academic degrees, as is usually done in public systems. The entire Civil Service pay scale should be re-evaluated for BIA school teachers. They might be given a choice between standard Civil Service status and a higher salary ladder with somewhat less security.

A new teacher should be provided with sufficient information to counter doubts and apprehensions he might have. At least one month before he begins he should be sent a package of literature describing the history, culture, etiquette and language of the tribe whose children he will be teaching. A bibliography should also be included. This orientation package could be prepared with the help of the tribe, and would provide residents with a meaningful role in the training of new teachers.

The recruit should also be taken to the location of his school before he begins work and familiarized with the facilities and equipment which he will be using. The on-site orientation program should be expanded to two weeks (as is now the practice on the Navajo reservation). The teacher should have a standing invitation to come to school any additional time during the summer before the beginning of the term.

An officer at each area or agency should be responsible for helping each new teacher and his family move. The expenses of their moving should be repaid to the teacher after nine months, instead of after a full year, so that teachers will not be tempted to quit just before the beginning of the new term.

Teachers dissatisfied with their original post should be offered relocation information services by the Recruitment Office; these services are currently furnished only for teachers who have completed a four-year term of duty in Alaska. Conditions in all schools should be examined to determine whether any other locations should be considered hardship posts, and whether pay scales should be raised accordingly in these areas.

The selection of applicants would be made more efficient by determining definite qualification and criteria for Bureau teachers. The criterion of "warmth", now named as the prime requirement, should be more clearly defined; other requisite qualities are educational expertise, innovativeness, self-confidence, and responsiveness to challenge.

Since the use of projective personality testing is prohibited by Civil Service policy, more information should be gathered which the

raters can use to assess the personality of the recruit. At least one teaching skill demonstration in which the applicant describes how he would handle a difficult classroom situation should be included.

Interview procedures for students and working teachers should be standardized: all recruits should be interviewed, rather than applying this procedure only to students and very-highly-rated working teachers, as now. Present techniques depend heavily on the recommendations of supervisors for the assessment of experienced teachers. A file of all references from each superintendent should be kept to avoid biased evaluations.

Present and past Bureau teachers could provide a source of information helpful in detecting recruits with a high probability of success. Questionnaires and interview results from esteemed BIA teachers should be analyzed to determine response patterns which might give raters a better idea of what to look for in recruits. Information about present Bureau teachers could be compiled from applications and entrance interviews. These, however, should not be conducted by the departing teacher's immediate supervisor.

Incentives to teachers for working in the BIA school should include salary raises scaled to student achievement. Successful teachers might also be rewarded with travel to Europe, chaperoning selected upper-class high academic achievers for 8 weeks. Teachers would be nominated by their immediate supervisors. One-half year sabbatical leave at full pay should be awarded after seven years of service. BIA teachers should be provided with gift memberships and subscriptions to professional teaching organizations and journals, to emphasize their role as professional educators and to familiarize them with the professional aspects of teaching. Research and Development Sabbaticals to successful teachers, selected on the basis of special application and the recommendations of supervisors and headquarters staff, would furnish another attractive incentive. The grants would be for one year of Research and Development to be carried out at the university of the candidate's choice. The average cost of such programs would be approximately $35,000 per year.

Once teachers have been recruited, selected and assigned they must receive proper training, both on the job and at workshops. An in-service program which would improve teacher training and morale and provide incentive for outstanding service would be in-service training for teachers by correspondence courses. Immediate salary increases would be offered for successful completion of the correspondence course. Teachers who resent assignment to remote BIA schools may be made to feel that they are part of the vanguard of educational innovation, rather than isolated from the development of their chosen profession.

Continuous Summer Teacher Training Workshops should also be conducted to improve teaching methods, teacher-student communications, language barriers, cultural barriers, poor teacher motivation, etc.

Several of the innovative instructional methods proposed by Abt Associates will require special training for those teachers involved. The new techniques and their costs and pilot-program schedules are outlined below.

Classroom Student Teams Program

Teachers would be trained to encourage student teamwork through use of "committees in semi-competitive classroom activities. Periodic meetings of the teachers would be held to discuss problems and successes. A pilot program involving 145 teachers representing every grade level, 1 - 12, in about 12 schools would cost approximately $95,000.

Language Training for BIA Teachers

Another training program which should be implemented in each school where language is a problem would train teachers in the Indian languages spoken by their pupils. Indian teachers should be given first priority for positions, but other capable teachers could be taught the language. This would reduce the language barrier between students and teachers and demonstrate to pupils the importance of their language. Such a program would encourage parental involvement. A pilot project for ten teacher participants would cost approximately $33,300.

Student-produced Educational Films Program

Teachers and students would be trained in the use of Super 8mm movie cameras and film production equipment. This program should be begun in the sixth grade. Instruction would begin by familiarizing students with equipment, including cameras and editing and projecting devices. When the students have learned to use these tools, they can be taught elementary production techniques, including directing, writing and editing. They may then begin producing their own educational films. A two-week summer workshop, on a pilot program basis, would cost approximately $58,000. The proposed workshop would include six teachers and ninety students.

Training in Improvisational Theatre Techniques

This program would be incorporated as part of the BIA summer teachers' training project. One full-time director would work with several small groups each day. A pilot program could be initiated at a cost of $3400 (exclusive of costs of facilities operation, travel for participants, room and board, etc.) to involve 100 teachers and fifty schools. As mentioned, a full-time director would have to be hired to run the summer workshops during the summer and to visit BIA schools during the academic year to consult with teachers and administrators and direct various in-service training programs. The fully operational program, including a full-time director and year-round operation in one area would cost approximately $20,000 per year.

Guidance and Counseling Programs Directed by Teachers

Students interviewed by Abt Associates field staff expressed resentment regarding lack of adequate guidance counseling. This problem could be solved by assigning BIA teachers to direct guidance and counseling programs. There are two aspects to this project. First, the staff of qualified psychologists serving the system would be expanded so that at least each large school can offer full-time psychological counseling. Second, psychologists would train teachers to undertake guidance counseling. Teachers involved in this program would receive additional wages for their counseling duties.

After the initial training period, the psychologist assigned to each school would continue in-service training for teachers and provide assistance upon request or in situations where his professsional knowledge and skills are required. This arrangement would afford more counseling for more students and allow the psychologist to devote his full-time efforts to training and difficult cases. A test program, involving two large boarding schools and about 2,600 students would cost approximately $120,000.

Year-end Conference for Teachers, Graduating Students and Indian Adults

An opportunity for suggesting changes in old and experimental programs in BIA schools would be provided at an open conference held in each school at the end of the school year. Its purpose would be to increase teachers' sensitivity to the ideas and feelings of their students. Teachers would examine, in group discussions, their own and others' attitudes and behavior. Role reversals, in which teachers would be called upon to take the parts of students, might also be employed, a group discussion would follow each role play. These conferences should be conducted away from the school, during the students' summer vacation. Such methods could help to correct the poor communications between teachers and students which are a major cause of irrelevant, inadequate instruction and of low pupil motivation.

Equipment and Facilities

Field investigation indicated that, in general, deficiencies in equipment and facilities are not major impediments to the educational process in BIA schools.

The facilities occupied by the schools visited, with few exceptions, were at least equal to the average public school facilities which serve equivalent numbers of students and grades. Many school buildings were quite new, and few seemed to have suffered greatly from age. Some overcrowding was observed, but only in isolated instances did this appear to be a serious problem. The general quality and quantity of non-classroom space was somewhat less satisfactory. Libraries, cafeterias, auditoriums, gyms, and other recreational facilities were less available then

would be desirable, and in a few cases, they were definitely inadequate. Of all facilities problems, however, the most serious seemed to be that of the dormitories. Physical facilities seemed to be of generally lower quality than those of equivalent public or private boarding schools. Evidence gathered by field investigators indicated that the quality of dormitory facilities did not in itself cause student unhappiness, but that the social and psychological environment which is to some extent fostered by the physical characteristics of the facilities did have negative effects on the instructional process. This problem is described in more detail in Chapter II.

Equipment, in general, seemed a somewhat greater problem than facilities, though by no means a problem of critical proportions. Standard classroom equipment was generally found to be in adequate supply and of acceptable quality. Special instructional equipment (e.g., audio-visual materials) and equipment for non-classroom activities (e.g., athletic or music equipment) were less in evidence and frequently of inferior quality. Teachers and administrators repeatedly expressed the feeling that the procedures involved in equipment acquisition were a greater obstacle than lack of funds. They complained that uncertainties of when and how much equipment could be acquired forced the acquisition of lower quality equipment. Other aspects of this problem are also discussed in Chapter II.

The bulk of the evidence gathered in the field suggests that facilities and equipment suffer from sins of omission rather than sins of commission. Two points stand out:

1. Present facilities and equipment in BIA schools do not do all that is possible to teach and motivate children.

2. Little or no attempt is made to use facilities and equipment to overcome the special learning problems of Indian children.

Recommendations for new programs are based on an effort to make equipment and facilities play a positive role in these two areas. Within this broad framework of goals, a number of principles or objectives have been formulated as guidelines for the use of facilities and equipment:

1. School facilities should not be merely places where school activities are conducted. Facilities can, and wherever possible should, be used as instructional instruments to stimulate students' interest and transmit information.

2. Design of facilities should take into account the relatively recent advances in technology and teaching techniques. Classroom design, for example, should provide for the increasing use of instructional television and small group teaching techniques.

3. School facilities design should maximize the functional integration of the school with the surrounding community. It is particularly necessary that reservation schools, which constitute the majority of BIA schools, be both functionally and aesthetically a part of the reservation. Rather than being an enclave of white man's culture on the reservation, the school should serve as a link and a contact between the two cultures.

4. Equipment should be used both to increase student learning in standard instructional situations and to stimulate learning in out-of-class situations. Audio-visual equipment, for example, may reinforce a teacher's presentation in class. The same kind of equipment used in the hallways, or the community center or in homes may allow learning to take place quite apart from the teacher's formal efforts.

5. Equipment should be used to bridge some of the cultural gaps that exist between the Indian child and his counterpart in urban or suburban public schools. Gaps exist not only in the amount of general academic knowledge which the child may acquire by exposure to it out of the school setting, but also in his understanding of the customs and cultural and social processes which form part of the off-reservation environment.

6. Wherever possible, equipment should be used in a simultaneous attack on the educational problems of Indian children and the economic and other problems of the reservation. Since on important educational objective is to train students to be useful in the process of development of the reservation, there should be numerous cases in which the same equipment can serve both purposes.

The programs described in the following pages suggest some of the ways in which these various objectives might be achieved in the BIA schools. The discussion includes only those programs which involve the use of a radically different type of facilities or equipment, or which involve a significantly different kind of use of existing facilities or equipment. Programs which would simply require more of equipment and facilities now in use, and would necessitate only minor changes in the design or use of the items, or which involve facilities or equipment as only a minor component of the program are not discussed here. For a complete listing of programs, including estimated costs, see Appendix B.

Facilities Programs

Periodic Centralized School

The boarding school system is a response to the problem of low population density in areas served by schools. However, this arrangement cuts adolescents off from much of their family life; many parents and children are less than enthusiastic about the boarding schools, but consider them the only way of obtaining an adequate education.

One alternative to the present arrangement would be to change the scheduling of the school year. The current system, with a 30-week school year, a 6-hour class day, a 5-day school week, a long summer vacation, and shorter vacations during the school year, is based more on tradition than on functional requirements. School could be held in 2-week periods, with a 10-hour study day and a 6-day week, with 4 weeks off between each school period. A single facility could serve twice the number of students presently accommodated; thus, two boarding schools could be combined, and the inferior facility utilized for other purposes. The same size faculty (equivalent to that of two schools) would be required, owing to the increase in teaching hours per week; but more specialization would be possible. The faculty would have two weeks off during each six-week cycle.

The periodic centralized school would allow the student to spend two-thirds of his time with his family, and to be away from his family

for no more than two weeks at a time. At the same time, it could provide him with a more challenging, stimulating and intensive educational experience.

Instructionally Active School Buildings

The physical sciences and their applied technology are among the areas in which Indian children have least opportunity to gain knowledge through simple exposure in everyday life. One possible way to overcome this problem is to make the school facilities continuously illustrative of the principles upon which they are constructed. Wiring and ducts in the building can be exposed to students' observation. In some cases the use of transparent materials can allow observation of function, and in others it can be illustrated through graphic representations (cross-sections, flow charts, architects working drawings, photographs of the construction process, etc.). Measuring instruments, such as strain gauges, thermometers, audio sensors, voltameters, etc., can give students an understanding of basic engineering techniques and their relation to our physical environment. Signs directing circulation or identifying rooms could be imaginatively designed to teach about the process of communication and functional design and planning.

Mobile Schools

Another alternative to the problems created by a geographically dispersed student population is the concept of the mobile school: rather than move the students to the school, move the school to the students. Two basic schemes are suggested:

Small mobile schools could operate on a daily basis. Trucks, buses or helicopters, designed for or converted to classroom use, would travel daily to pick-up points in remote locations. The first stduents picked up would be instructed individually or on a small group basis, while activities requiring full class participation would be scheduled for the hours between the last pick-up and the first student's departure.

Large mobile schools could function as boarding schools for periods of at least one month. The most useful facility for this type of school would

be a ship, perhaps a surplus troopship from World War II. Such schools could conveniently serve students in Alaska and the Pacific Northwest states, although the ship could also be used for summer or special programs for students whose homes are located farther from the sea.

Foster Homes Near Central Schools

The problem of inadequate home life for students in boarding schools may be attacked either by allowing the student more time at home with his family or by attempting to increase the amount of "home life" available to him at school.

One way to increase home life at school would be the institution of a system of "foster homes" for students near the school. Families residing within easy daily commuting distance of the school would be recruited in advance of the school year as potential "foster families" for one or more children. These families would be subsidized on the basis of real costs of maintaining the "foster children." If sufficient families could be found in the immediate vicinity of the school, all children could live in this situation. Where insufficient homes exist, students could spend one semester with a "foster family" and one semester in the regular boarding situation. This system would not only allow students a respite from the boarding situation, but would also reduce the numbers of students occupying the dormitory facility at any one time.

Family Cottage Boarding

Another approach to the problem of inadequate home life at boarding schools is to re-design dormitory facilities to provide a social situation more closely resembling that of the home, such as exists at Riverside Indian School. In the family cottage boarding system, the large, barracks-like dormitory facilities would be remodeled into smaller "cottage" units. Each unit would accommodate approximately 15 students, plus a teacher or counselor and his family. The cottage unit would form the nucleus for many social, recreational and even academic activities, as well as the "domestic" (cooking, eating, cleaning, etc.) aspects of

school life. Where the school staff includes too few married teachers or counselors, married non-teaching Indian couples might be recruited, either from the immediate vicinity of the school or from the students' home communities. Where a number of distinct communities are served, assignment to the cottages might be conducted on the basis of home community.

Community Participation in Facilities Planning

Decisions regarding the specific design of school facilities currently in use in the BIA system have only infrequently involved significant participation by the members of the communities which are served. This has contributed to the present condition of social and physical isolation from the community of most BIA schools.

The involvement of the community can be increased by allowing community members to plan portions of the school facility which serve the community as well as school functions. Instructional requirements of the school would in general have to be determined by, or at least on the advice of, school staff members. A fixed percentage or amount of funds over and above that required for the basic educational facility could be made available for additional facilities desired by the community. These might include a library and reading room, a theater, a gymnasium, an auditorium, etc. Specific design of the complete facility could be agreed upon by BIA staff, architects, and tribal representatives.

Facilities for Visiting Parents

If the boarding school is isolated from the community which it serves, it is even more alien to the parents of the children it serves who usually live at a considerable distance from the school. Typically, they visit the school only to leave their children at the beginning of the term and to pick them up at the end of the term. Bus schedules and jobs at home permit the parents no more than a very few hours in which to see the school. As a result, they may be hostile to the school, or lack the ability to provide specific guidance to their children.

This problem should be overcome by encouraging parents to visit their children's school. Students in vocational courses, or under the extra-curricular direction of qualified persons, could construct adequate dormitory facilities to accommodate parents. These accommodations, plus meals in the student cafeterias, could be provided free of charge to the parents. Special programs for the parents would familiarize them with the nature of the school and the instructional processes in it. Activities such as field trips could utilize the parents present as additional aides, thus involving the parents in the school in an ego-satisfying manner (in a position of some authority), educating them, and obtaining useful services from them.

Greenhouses

Biology and natural science classes rarely provide the student with deeper knowledge than he already has about his natural environment and can generally teach him nothing about different environments. This problem can be attacked by building greenhouses in which unfamiliar species of plants may be cultivated. Relatively inexpensive and uncomplicated greenhouses may be constructed out of wooden beams and plastic sheeting by the students themselves. The greenhouses could also be used to cultivate garden vegetables and flowers which the students might later wish to grow at their own homes. Vegetables grown could be used in the school kitchen, and flowers could decorate the classrooms.

Facilities and Equipment Programs

Ham Radio Shacks

Indian students are normally unfamiliar with the technology which is so important a part of American life. This cultural isolation, in addition to geographical isolation, cuts Indian young people off from the mainstream of American culture.

The establishment of ham radio shacks in BIA high schools could serve both to acquaint students with the technology and to establish real lines of communication with persons outside the reservation environment. Students would be encouraged to become proficient not only in the use of the equipment but also its construction, maintenance and repair. For some this could mean learning a specific skill which would be useful in finding a job. For others, it would be an interesting and stimulating extra-curricular activity.

Home Service Centers

Home service centers in BIA schools could mount a double-edged attack upon theproblems of parent alienation from the educational process and school isolation from the community. The service centers could include laundromat facilities, sewing machines, irons and ironing boards, etc., which would be made available to members of the community to use at the school free of charge. Meals might be made available in the school cafeterias at nominal charge. In this way, the school could become a center of community activities which parents would use frequently, becoming increasingly familiar with the school and its educational activities through simple exposure. Teachers could then take advantage of the parents presence at the school to invite them to classes, discuss their children's progress and in general increase their involvement in the educational process.

Community Computer Centers

Progress in development on the reservations is dependent not only on the education of today's school-age children, but also on the education of many adults who have had little schooling. Training in recent technological developments and skills should be provided for Indian adults. The community computer center is a facility with the capability for computer-aided instruction in a variety of basic and intermediate subjects. Such a center could be established either at a school or elsewhere in the community. The center would be freely available to any one who wants to use it, free of charge. In addition to computer-aided instruction, it could be used for high school or vocational school instruction in programming; eventually it could develop into a service facility for local enterprises.

Multiple Small Day Schools

Another possible response to the vexing conflict between the efficiency of the centralized boarding school and the superior home life available in the day schools is to create a series of small day schools in the areas served by the centralized school. Technological advances would make it possible for such schools to avoid the inferior instructional situation of the one-room school house. The small day schools would be linked to a central facility by means of closed circuit television. Instruction in

specialized subjects would originate in the central facility. Teachers in the day schools would be trained in teaching techniques to make maximum use of pre-prepared television programs.

One of the major obstacles to the use of dispersed small day schools in the past has been the expense of constructing adequate road systems for students to commute easily (normally by school bus). This obstacle might to some extent be circumvented by concentrating expenditures on transportation vehicles which do not require high quality roads.

Home Instruction With Games

On the reservations, the burden of education falls particularly heavily upon the schools, because of the relative lack of learning opportunities in the home. The parent with little or no formal education is unlikely to be able to carry out instruction on his own. Moreover, the parent's inability to help his child with his homework tends to further exclude the parent from the educational process.

One way to increase the amount of education which can take place in the home is through the use of educational games. All members of the family may participate in the game. Children given the game materials and a demonstration of the game sequences in school can then teach their families to play at home, with particular emphasis on the education of younger siblings. The younger children thus gain at the least some advance exposure to the concepts which they will meet in school, and the games may prove effective enough to eliminate some requirement for formal school attendance.

Elementary School Zoos

Books and traditional classroom activities are not always the best means of maintaining high student interest and motivation. One instructional aid which can stimulate much interest in a variety of subjects is the zoo. A zoo established for an elementary school could contain local fauna as well as animals from other habitats which can be kept safely and economically. Curriculum units involving the zoo could be developed by teachers and even by older students. If a number of elementary schools

had such zoos, they could exchange both animals and curriculum units in special programs. Students could care for the animals themselves, learning responsibility as well as biology, physiology, social organization, psychology and ecology.

Mechanical Zoos

Motivation is a problem in the education of almost all children; the Indian child has the particular problem of unfamiliarity with the commonplace items of urban or suburban life. The mechanical zoo is intended to attack both the motivation problem and the particular problem of cultural isolation.

The basic element of the mechanical zoo is a room filled with such common and relatively inexpensive mechanical and electrical items as toasters, tape recorders, typewriters, electric fans, etc.
Emphasis would be on function rather than construction: the zoo would not attempt to teach the students to build or repair an electric fan, but to teach its function and operation. Machines or models could be purchased through government surplus or donated by industry. Different schools could exchange zoo machinery. The materials could be integrated into a multitude of curriculum units, and would be useful in helping reservation-based students understand texts composed for students with more typical exposure to American culture.

Technological Micro-Museums

Similar in concept to the mechanical zoo, the technological micro-museum focuses on the Indian student's unfamiliarity with machines. The micro-museum consists of a room filled with all kinds of machinery, including small pieces (clocks, typewriters, etc.) and portions of larger machines (compressors, distributors, etc.). Students are encouraged to tinker with the machinery, taking it apart, putting it together, adapting parts. The micro-museum is useful in science courses and lower-level vocational courses. More important, students gain a valuable familiarity with mechanical and electrical principles and the techniques involved in working with machinery. For many students, this kind of experience will provide the stimulus toward a career in the mechanical or electrical areas.

Equipment Programs

Heavy Construction Courses

Vocational curricula in many BIA schools at present train students primarily in skills needed on the off-reservation job market. However, the needs of economic development on the reservation now require a considerable force of skilled and semi-skilled labor, especially in the construction industry.

Courses in heavy construction should be taught at BIA high schools as a part of the standard vocational curricula. The equipment required would not only be instructive but would have a significant positive effect on student interest and motivation. Courses would include actual construction projects for the school and community, planned and executed by the students under expert supervision. Part of the income from the projects could be used to defray equipment costs, and part paid to the students working on the projects.

Printing Presses

Printing presses in more vocational and high schools would allow students to publish newspapers and other materials as a service to both the school and the community. Small schools would have compositor's sticks, type and hand rolling presses. Larger schools would be equipped with larger presses and would print newspapers for smaller schools from copy sent to them. Copy would be written both by tribal leaders and the students interested in journalism; other students could compose, edit, and print the newspaper. Students could solicit advertising from businesses in the community served by the newspaper. In addition, students might print handbills, circulars, and other items as special projects.

The installation of printing presses in a large number of schools would serve three purposes. First, the machinery would stimulate students interest. Second, a number of students at a pre-vocational level could be given training in skills relevant to the commercial printing industry. Finally, the use of the presses to serve both school and community would establish needed communication between them.

Flight Training in High School

As mentioned above, it has been observed that Indian students, like most American students, respond positively to machinery which they operate and experiment with. A flight training program in high school is intended to put this mechanical aptitude to education use. A training course in piloting small aircraft would be offered to interested students in the later years of high school on an extra-curricular basis. Teachers in standard academic subjects who are also licensed as flying instructors would be recruited; all training, both on the ground and in the air, would take place under qualified supervision.

The course in flight training would generate the interest and provide the initial background for a variety of aircraft-related careers, especially in Alaska. Some students would be expected to go on to obtain commercial pilot's, aircraft, and mechanic's, or aircraft controller's licenses. The equipment for the course could also be used for small group field trips and for emergency communication with isolated areas of the reservation community.

On-Bus, On-Line Education

A problem which has been frequently mentioned in these pages is the Indian child's lack of constant out-of-school exposure to learning stimuli. Schools should conduct an intensive effort to maximize the students "exposure learning" time while he is at school, but outside formal classes.

The principal concept of on-bus, on-line education is to expose the child to instructional stimuli in the more or less institutionalized waste times. These include particularly the time spent on school buses and the time spent standing in lunch lines, lines to go into class, etc. Films or taped television programs could be shown on buses and at strategic points around the school facility to encourage continuous learning through exposure throughout the day.

Computerized Instruction

The main instrument of education for most students is the teacher. However, in a large number of cases the personal interaction with the teacher, especially with the teacher from a different cultural and ethnic background, constitutes a significant negative factor in the education of Indian students.

Some of the instruction now dependent on the teacher may best be conveyed by the use of teaching machines, to which students have been shown to respond positively. Because of the undeveloped state of the art in computer-aided instruction, the first major effort in this program will be to construct a completely computerized course in one major subject (math, English, social studies), applicable to the level of second- or third-year high school students. If successful, full-scale testing could identify the subjects or situations in which students react better with computers than human teachers, and computerized curricula could be developed for all of those situations.

Video Tape Monitoring and Critique

Observation suggests that inferior or mediocre teaching may be the greatest contributor to the low rate of academic success among Indian students. It is difficult, however, to communicate an observer's reaction to a teacher in such a way as to cause improvement. The observer cannot interrupt the class to provide immediate feedback on points of the teacher's presentation, and the teacher's memory of specific situations and actions fades rapidly after the class.

Using video tape recordings to monitor classroom occurrences and to serve as the basis for criticisms of teaching method could circumvent these obstacles. The teacher would have in front of him reasonably complete evidence on the points under discussion and would be much better able to take an objective view of the problems if criticism was presented first in a confidential, non-threatening context. This method would allow presentation of the successes as well as the failures, so that the teacher could see a successful handling of a situation which had given him difficulties. This evaluation could be provided on a frequent basis, so that the teacher would not only be continually stimulated to improve his performance but also would have a record of improvements in his technique.

Dormitory Living

In the discussion of Educational Processes in Dormitories, several of those aspects of BIA dormitories which need definite improvement were described. Among the problem areas noted were barren decor; inadequate supplies of furniture; glaring deficiencies in the number and quality of

dormitory personnel; anti-social and self-destructive behavior on the part of the students; insufficient counseling to students to permit adequate intellectual and cultural development; and the rigid hours, excessively frequent inspections, strict rules and orders, and the lack of privacy in the dormitories. All these problems tend to cause or foster students' emotional problems. The report also described a set of possible criteria for measuring the acceptability of boarding schools. Five criteria are most relevant to the purpose of this section of the report. Student's social and emotional needs, for adult guidance, counseling, role models, and supervision, must be met at least as well as is common in good private boarding schools. Students must be protected from the anti-social behavior of aberrant students, and should themselves be restrained from such behavior. Students should be required to maintain orderly living quarters, to attend classes regularly and to comply with appropriate school regulations. Student intellectual and cultural development should be encouraged, facilitated, and exercised by informal and formal activities outside regular classes, such as a library, hobby clubs, film and musical presentations, and guest speakers. Lastly, students' social development should be assisted by such formal and informal social activities as athletics, clubs, dances, and concerts. It is the purpose of this section of the report to describe some programs designed to alleviate these problems and to predict the probably results of their implementation.

To improve the living conditions in a dormitory, a pooling of dormitory room accessories is recommended. Such accessories would consist of a variety of colored pillow cases, bed spreads, rugs, throw pillows, and mats to cover chests of drawers. Paintings, including works by Indian and modern artists should also be made available for display in common rooms and sleeping areas. Some students, especially in the southwest, bring to the schools their own Indian blankets, rugs, and trinkets; they should be encouraged to use these items to decorate their quarters. In each case, students should be encouraged to exercise their own preferences as to accessories and decoration for their rooms by choosing the items from the pool of dorm accessories.

This program should assist the students to become more individualistic, creative, and self-reliant; all these characteristics contribute to greater self-confidence, which is the critical factor in the improvement of student behavioral patterns.

In the same context as the program described above would be a project for the improvement and decoration of furniture by the students. Students would be given the necessary equipment to repair, paint, and varnish such of their furniture as dressers, beds, lockers, desks, cubicles, chairs, and tables.

During the field research work conducted by Abt Associates Inc., dormitory personnel assured researchers that students were allowed to rearrange the furniture in their rooms or dormitories, but students do not seem to be motivated to individualize their living quarters. Some students have indicated that they do not believe the instructional aides who inform them of this privilege, because permission is often impersonally or vaguely stated. To mitigate this low level of student motivation, it is recommended that the dormitory personnel take the first step in instigating this project. Where lockers or clothes cubicles are shared among several students, an opportunity would also be created for the students to learn to compromise or negotiate as to the kinds of improvements necessary in their locker or cubicle.

Most of the Indian students are very aware of the changing fashions of the national young adult community, and they are eager to be assured that they do not differ greatly from their contemporaries in the cities. The Indian teenagers want to hear and read about the activities, habits of dress, and problems of adolescents across the country. Indian students derive much of their knowledge of the rest of America from magazines and other periodicals for teenagers. Indian students are more interested in reading these kinds of reading materials than any others; irrespective of their literary merit, these materials are stimulating to the students and tend to increase their vocabulary, reading comprehension, reading speed, and knowledge. In order to foster these goals, which lead to academic achievements, dormitory personnel should order those materials for which students express

their preference. This may include fashion magazines, comic books, and even popular records; when students learn the words of a song, they have learned something about how words are organized into ideas. Although a variety of periodicals are at this time available to students in the dormitories, they do not appear to be adequately utilized.

The principal student complaint has been that communication between dormitory personnel and students is poor; students and instructional aides often neither trust nor respect each other. Disputes, absences without leave, drinking, and inappropriately harsh disciplinary actions are often the result. The number and quality of the instructional aides to whom these matters are delegated is often very limited. To improve the relations between students and dormitory staff the following four programs, to be described below, are recommended.

1. Student Committee to Counsel Own Peers

In each dormitory, a student committee of approximately five members should be chosen by the students to serve as monitors of their peers. Their duties would be to counsel students with problems; to obtain from students information to assist professional guidance counselors in establishing rapport with problem students; to assume the responsibility for assisting or subduing drunken or violent students (a category in which instructional aides, according to students, are usually insensitive or incompetent); to establish, with student involvement, rules and regulations governing behavior at social affairs, town privileges, dating privileges, recreational privileges, etc.; to handle all disciplinary actions against violators of student rules; to present all student grievances for proper action at staff and student council meetings; and to operate autonomously of staff control, except in cases in which the student committee requests assistance.

It must be realized that the effectiveness of such a program would be greatly jeopardized if the committee were answerable to staff members. Students would, in such a case, cease to trust or respect their representatives. Responsibility must be given to the students, who often know best of all the school's problems and the probable causes and instigators of

disturbances. Another important aspect of this program, crucial to its success, is that students will respect and obey their own rules.

2. Dormitory/Work Study Program

Students have expressed the view that misunderstanding between the Dormitory Aides and students is mostly the result of the heavy work load, impersonal attitudes, and lack of interest in student welfare of the dormitory personnel. The Dormitory/Work Study Program would enable the students to work as assistants to the dormitory personnel in performing their duties and sharing the problems which they face in trying to combat the barriers to successful relations between students and dormitory personnel.

Another benefit of this program would be the development of students' occupational skills for the students. Students would receive a small stipend for their work. Their increased understanding of staff members' perceptions and difficulties would in all likelihood be communicated to all students. Mututal respect and understanding between staff members and students could in this way be fostered.

3. Student/Dormitory Personnel Meeting Methods

Periodic meetings between students and dormitory personnel, to discuss problems and to design new programs, are a necessity. The meetings should be made constructive and educational, by the use of such methods as group discussions, role playing, and sensitivity training. The basic goal is again to improve communications between students and personnel in the dormitories.

Doctors, nurses, community leaders, parents, BIA personnel, private entrepreneurs, and others could be asked to present their views on dormitory and other school improvements, job skill requirements, and other matters.

In this way, the ideas and suggestions of persons with a wide variety of points of view can be applied to the improvement of the schools.

4. A Workshop for Instructional Aides

A workshop for instructional aides, whose expenses would be paid, must be considered, as they are the personnel who have the greatest contact with the students. Instructional aides assist ill and homesick students and those who are having problems with their school work or emotional difficulties. Aides must, in effect, serve as substitute mothers or fathers, while at the same time having to mop floors and mend and iron student clothing. Aides should receive academic training as well, since many lack even a high school education. Although this lack of formal education does not necessarily rule out effective action, dormitory aides could be most useful if trained to help students with their home work and to instruct them in the elements of health and hygiene.

Chapter VII

Organization and Management Programs

The 250 schools operated by theBIA for American Indian elementary and high school students suffer from problems of leadership, administration, and organization. The special educational problems of a culturally different school population from unusually impoverished rural homes require an unusual degree of school system effectiveness, yet BIA schools are organized and managed in an unusally ineffective manner. In an attempt to formulate management programs to improve the present cumbersome and dispersed management system of the Education Division, the analyst must first consider all the possible policy alternatives. He must decide whether the data needed for effective decision-making should be collected and tabulated by individuals or by a computer; whether decision functions should be centralized or localized; and whether the Education Division can act autonomously in the particular situation. Abt Associates Inc. has found that the Bureau has not decided on any set policy in these regards. Some data is tabulated by computer, while other data is processed by individuals. Strength of will, rather than authority or competence, seems often to determine whose privilege it is to make decisions of policy. The Education Division appears, moreover, to enjoy remarkably little autonomy. These problems must be borne in mind in considering the three types of programs discussed below.

Management Information System

Every management system has two component sub-systems: that which provides data to the planner, and helps him make planning decisions; and that which provides the manager with the current information needed to enable him to discharge his responsibilities efficiently. An entirely manual system of data collection provides decision-makers with reams of paper, far too voluminous to permit thorough tabulation except at the expense of excessive time and labor. On the other hand, a completely automated model capable of collecting, storing, and analyzing the mass of information needed would be extremely costly, highly inflexible, and well beyond the present capability of the staff of the Bureau's Data Center.

Given these constraints, Abt Associates Inc. recommends the use of a number of practical financial planning models (described in detail in Volume III) which can be used either individually or in combination to project the probable expenditures resulting from the implementation of various possible policy decisions. These planning models do not, however, direct to whom is to be assigned the authority for decision-making on the basis of the information which they provide.

Also recommended and outlined in the Appendix are three management reports for distribution during the year. Abt Associates Inc. has worked closely with the Education Division in designing a monthly financial, personnel and enrollment information system to permit manager to control effectively the operations which are their responsibility. The plans suggested in the Appendix for distribution of these reports are not definitive. They attempt to deal with authority centers as presently perceived, and could be adjusted if warranted by a more precise definition of the hierarchy of responsibility.

The Reorganization of American Indian Schools

At present, there is no clear chain of command from the Assistant Commissioner of Indian Affairs, Education, to the individual schools. Schools are dependent for many of their policies and resources on BIA administrators having no direct responsibility for, or knowledge of, education. The confusion and uncertainty of authority resulting from this lack of a clear chain of command from highest to lowest education officials has prevented effective program development, planning, budgeting, management, and control at all levels of the BIA school system. This confusion about who has authority and the responsibility tends to make school administrators reluctant to risk taking any initiative, while Central Office people are tempted to excuse themselves of responsibility for deficiencies in Indian education by claiming a lack of authority. A clear, precise definition of the chain of command within the Division is therefore necessary.

Central to the problem is the fact that the principals of the 250 BIA schools must depend on many BIA administrators having little or no educational competence for many of their policies and resources. School principals report to agency and area superintendents that are often more oriented

to natural mineral than to human resources. Agency and area superintendents have budgetary and policy control over schools in their areas.

For example, schools depend on the Division of Administration for approval of purchase orders; personnel changes and administrative budgets require area director approval; construction must be approved by the Engineering Division; the most minor maintenance must be approved by the Plant Management Office. Operationally, this can mean that at one school 200 students are without clean clothes because Plant Management fails to allocate resources to washing machines, or that textbook requistions are not met because Property and Supply at the area office has made other commitments.

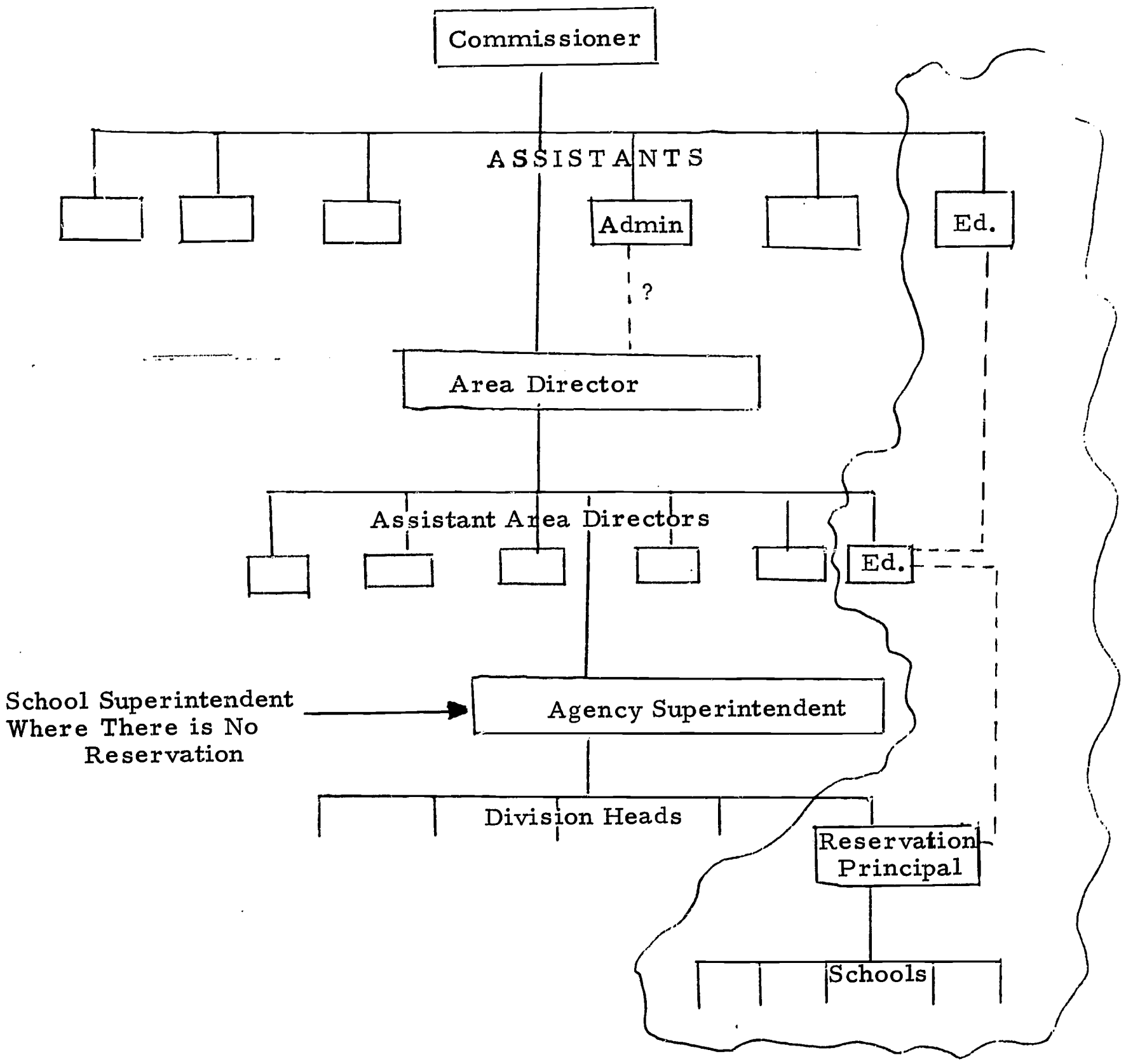
The BIA schools are organized as if the municipal water commissioner controlled a city's schools' textbook budget, and the parks commissioner controlled the schools' facilities, equipment, and personnel acquisitions, with the city school superintendent only an advisor to the mayor, yet responsible for the effective operation of the schools.

Under the present system, education officers in the agency and area offices as as liaison officers between the school and the agency superintendent or the area director to whom they are directly responsible. If that relationship is good, change may occur or, at least, requisitions and personnel actions that need the area director's signature will pass through his hands quickly. If it is bad, there is little the education official can do but talk to the liaison officer next up the line and ask him to put pressure on his boss who has the power to override the lower director or superintendent. At present this is where the Assistant Commissioner stands. He is a liaison man for educators in the field and he can only present their case to the Commissioner. The Commissioner at the same time will take reports from the area directors, who report directly to his office (see Diagram 1).

Even with its wide geographic dispersion, the Education Division should be made into a real school district. This means that the Assistant Commissioner should be directly in charge of the whole system and have all education report directly and primarily to him (see Diagram 2). A more appropriate titel for him might then be Superintendent of Indian Schools.

DIAGRAM 1

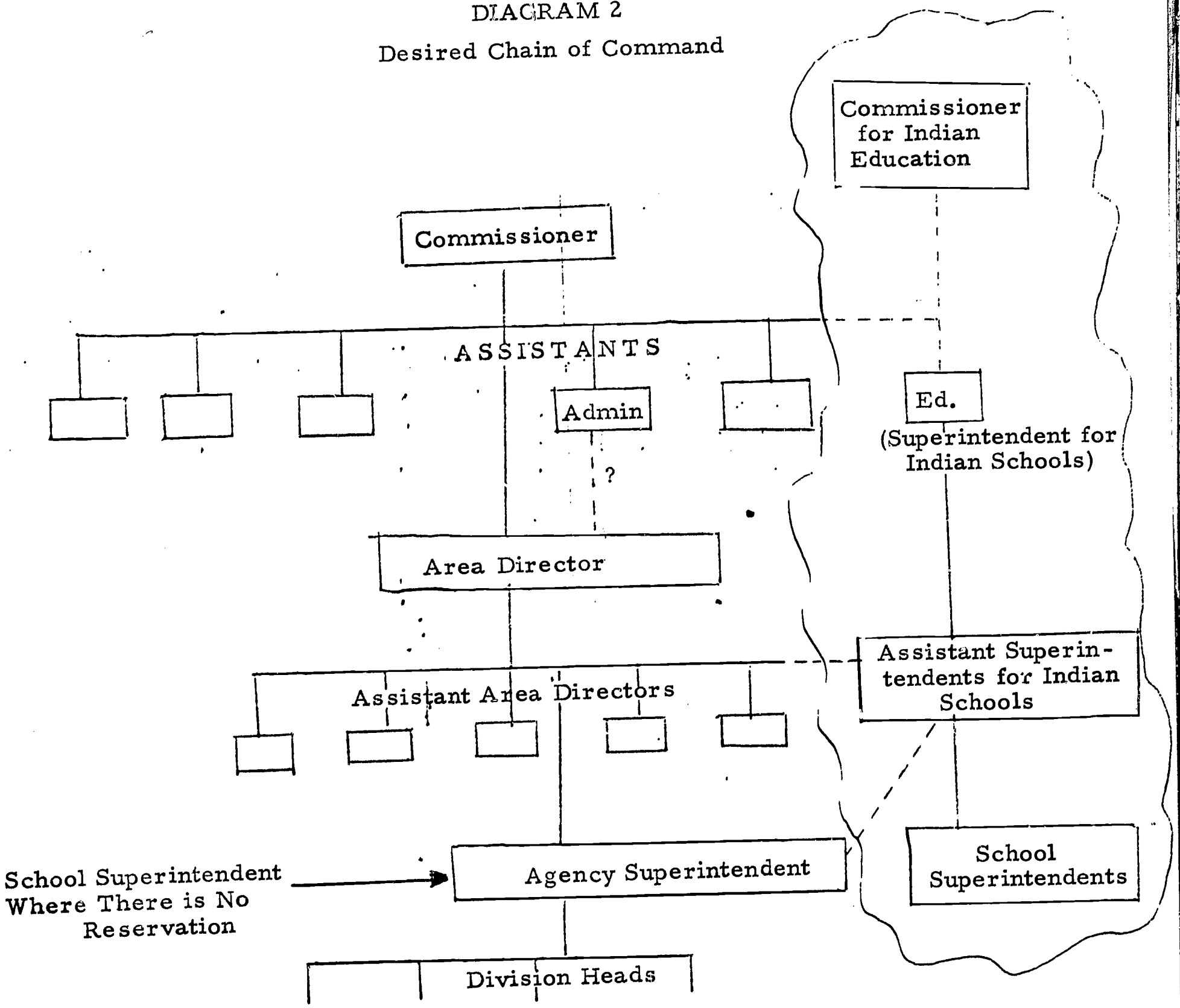
Present Chain of Command



Education Liaison Network: Little Line Control

DIAGRAM 2

Desired Chain of Command



Semi-Autonomous or Autonomous Indian School System

He would be responsible to the Commissioner and the Congress, as he is now, and also to an adult Indian constituency (perhaps a representative national Indian education council), which is not now the case. Those he is responsible for would also have to report to him.

School principals would report to agency education superintendents, who would report to Indian community school boards and area education superintendents jointly, who in turn would report to the Superintendent of Indian Schools and a national Indian education council. Thus, there would be a clear, unbroken chain of educational command from each of the schools to the Superintendent of all the schools and the representatives of all Indian peoples.

This is not a novel concept. It is the one that experience has proven to be most effective in almost all American communities.

It is essential to the American tradition that schools be controlled by local citizen boards representing the parents of the students. It is also essential to the national interest that federal schools be responsive to national policy, so that federal level sharing of this local control is indicated for BIA schools.

The management structure for Indian education must be related to the flow of resources into Indian education for progress and rational planning to take place. If large amounts of Federal funds are to be expended for Indian education, a clear chain of authority and reporting is essential. The present state of BIA schools reflects the past lack of such an organization.

Local governing bodies should oversee local administrators. These bodies should be made up of Indian community members to the maximum extent possible, and filled in with available expertise where local Indian response is minimal.

A reservation-wide school board is also needed for coordination with tribal activities, reservation economic development activities, and reservation-wide Federal programs. These boards must serve as coordinating bodies combining and grouping activities including education to maximize Indian progress. This is a function with the present Agency offices might well serve, did other structures and traditions not interfere. If the Education

Division had control of its funds in this way, the magnitude of its contribution to the overall BIA budget would ensure that the other divisions paid attention to its just requests for support of educational activities. In fact, it would probably be best to assign staff to the Education Division from the other divisions so that they would be on call when needed. This is done now at those off-reservation schools which need a whole range of services immediately available. A similar Education Division maintenance, personnel, and budgeting staff could also be assigned on a reservation basis.

A change that would definitely ensure the autonomy of the Education Division is the ability of education to handle its own funds entirely on its own -- write its own requisitions, have the appropriate education person approve them, and place its own orders. Responsibility for effectiveness would then certainly rest on educators, which is where it should be.

All this suggests yet another possibility: that the Education Division be broken out of the Bureau and become the Office of Indian Education. Perhaps it could be given commission status, receiving funds directly from Congress. This would be a definite step in the direction of making at least education an Indian-operated enterprise, if Indian participation on the commission were solicited.

At present teachers are recruited through the recruitment center in Albuquerque (elementary schools only) and the civil service recruiting office there (secondary schools only). This group was started last year and has not been very successful or decisive, even though it is the one which publicizes teaching for the BIA. Recruitment is not done by real public relations men and teachers are still screened at the area and agency level by non-educators. Their dossiers are looked over there, and their employment must be approved by the agency or area director. It would certainly be more helpful if both the school principals and the Superintendent of Indian Schools (currently Assistant Commissioner, Education) had direct contact with and supervision of the people who were doing the recruiting and selecting of school staffs.

There is at present no central authority that can relate educational expenditures to educational results. There is no standardized information on Indian student achievement or school profiles or teacher/student ratios or educational programs or educational curriculum which is used to make the Indian school system a better school system.

Effective program development, evaluation, and planning are impossible without comprehensive, timely, accurate, and available school and student data. There is presently no central, organized data except on a few items. Yet data have to be collected and stored in one place. The IADC is the logical data center, but it has not granted Education's requests for changes that would improve data access. This seems to be changing with the appointment of a man there to do only Education-related work. Still, the IADC has defended the need for almost total use of that equipment for administration purposes, even though the BIA Education Division contributes over $1,000,000 to it each year.

At present, the Education Division does not really have enough information to assume complete line control, and it seems unlikely to obtain it without either establishing its own data system, or assuming control over the IADC presently under Administration Division control. The former alternative incurs the costs of redundancy, thus Education Division administrative control over at least educational data storage and processing seems essential.

No remedial action can presently be taken by a central authority to correct wrongs, to use information gained from experience in one school to help others, to make sure the money spent in one school for food for a pupil is about the same as that in another -- all for lack of an effective organizational structure.

The Commissioner of the Bureau of Indian Affairs is the only source of this authority at the present time. He is one man with a limited amount of time and many pressing obligations. Most of the Bureau's budget is spent on education, but no individual or office charged with the responsibility of making this expenditure effective has the authority to do so. Until the authority for making changes for the better is given, there can be no responsibility for this task, and there will be little progress. The losers in this situation are both the taxpayers and the Indian students.

Management Training and Recruitment

Whether or not these major changes are needed, the managers in the BIA education system must be trained to use efficiently the information provided them. During the systems analysis, administrators' answers to questions about their responsibilities indicated that some managerial expertise exists which is not used. Their complaint that they lack sufficient control over finances and personnel suggests that they consider themselves competent in these areas. The administrators did not, however, express concern about either of the other two traditional control areas in management, planning and operations. Observation indicates that at all levels in the Bureau, training is needed in all four of these areas. It is particularly important that those area office staff who have the most authority receive intensive training in the monitoring of performance, in goal setting, and in evaluating the relative cost-effectiveness of alternative programs and solutions. Management training should be provided at all levels, both for those persons already in positions of responsibility and for new appointees.

In-service training can be accomplished in several ways. The most obvious is to provide training workshops, which should include simulations of crisis situations (possibly using video-tape for follow-up discussions), sensitivity training, training films, and instruction in the principles of systems analysis[1] and program generation. The school plan book and evaluation models designed by Abt Associates Inc. (see Volume IV) could provide a framework for program generation and might help schools to develop permanent "innovation councils."

In-service training might also be accomplished if administrators at different levels were to exchange jobs for one or two months. This would not only provide training for upward mobility for the person of lower rank, but would also increase understanding and communication about the opportunities for action available to each, and about the accompanying constraints. A corollary to this is the assignment of aides, either for training purposes or, in large schools, permanently, to the chief adminis-

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[1] Five steps characterize the basic techniques of systems analysis: goal setting, determination of criteria, identification of current status, identification of resource availability, and identification of constraints.

trators. The organization of the Institute of American Indian Art in Santa Fe comes closest to fulfilling this recommendation. There, an art principal, an academic principal, a plant manager, and a finance officer all seem to be fully employed at their particular tasks.

It will have been noted that no mention has yet been made of methods for the recruitment and selection of managers; it is, indeed, uncertain what characteristics in a candidate are indications that he would be successful as an administrator. It is uncertain, as well, where promising candidates are to be found. This problem exists throughout government agencies, but is particularly acute in the BIA owing to the Bureau's poor public image. This poor image discourages potential candidates for administrative positions, and for teaching positions as well, from applying. It is imperative, therefore, that the BIA act immediately to improve its image through some public relations program.

Still other questions must also be answered: what are the most effective types of administrators in a cross-cultural education setting? What are effective criteria for selecting these types? Where, once these criteria have been established, are such persons to be recruited? There are easy answers to none of these questions. The Education Division might appoint administrators without backgrounds in education, but with proven ability in business management. Even if successful, this could only be considered a long-range alternative. A comprehensive study of the entire problem should be undertaken if superior management is to be found to run the schools.

It may perhaps seem obvious in the extreme to state that once a manager is appointed he should be given adequate pre-service training. In its systems analysis, Abt Associates Inc. found, however, no evidence of such programs. Training may include the use of temporary aides, as mentioned above, or it might involve voluntary local workshops for staff members, most of whom would probably be teachers, aspiring to hold administrative positions.

In order to attract able administrators a number of incentives beyond a higher G.S. rating could be offered. Earlier retirement, perhaps a 20-year program similar to those of the armed forces, could be granted. This would in addition guarantee that high administrative positions were not held by men older than is ideal for communication with younger subordinates and students. The career ladder might also be expanded: administrators could begin at a lower level than is now the case, but could also rise higher, in salary and, perhaps, position, than is currently possible.

The three broad managerial needs discussed here, for a management information system, a reogranization of the Education Division, and the improved recruitment selection, and training of managerial personnel, must be met if the BIA education system is to improve. It may be granted that the system is presently more powerful than any of the individuals who make it up; it is also the opinion of the analysts, however, that administrators possess far greater freedom to innovate and to act than most have the skill or courage to exercise now.

Chapter VIII
Economic Development Programs

The conclusion of Abt Associates' analysis of Indian economic development was that an integrated program to encourage development could significantly raise incomes and employment on Indian Reservations. The principal areas in which programs are required within the context of an overall plan, are subsidies to employees, measures to develop skills and attitudes favorable to economic programs, measures to develop the structure of the reservations and transportation, housing, population control and planning information.

Labor Subsidies

In order to stimulate the economic development of Indian reservations, industries must be attracted to locate by an abundant, unemployed, unskilled or semi-skilled labor force. Furthermore, in order to maximize employment, the effective wage costs must be reduced for the employer. The labor subsidy is the most direct means of accomplishing this reduction. The point has often been made that labor subsidies in themselves are not sufficient to attract new industry; bottlenecks and inadequacies in public infrastructure may prevent industries from exploiting even highly-subsidized wage rates. The labor subsidy should therefore be a part of a larger package of inducements sufficient to attract new industry to the reservation.

Direct labor subsidies already exist as part of on-the-job training programs offered on some reservations. This subsidy terminates at the end of the training period however, and wages paid by the employer must then be brought in line with the minimum wage, even though the worker's marginal productivity may not be that valuable. Consideration should be given to extending this subsidy over a longer period and applying it in industries where on-the-job training is not appropriate. The Abt Associates report submitted in November described the various forms that labor subsidies might take. Briefly, these were:

1) direct subsidization of the hourly wage
2) subsidization of overtime wages

3) subsidization that could be attached to the individual's labor services, not his job category. When the individual moved his subsidy would travel with him.

4) subsidization in kind by means of free training programs for employers

1) The Direct Subsidy to Labor: Employers would receive cash subsidies for each hour of Indian labor employed. For some reservations the subsidy would have to be high and permanent in order to attract new industry. For reservations with more advantageous locations, the rate of subsidy could be scheduled to decline regularly each year on the assumption that the productivity of the work force will rise and that the costs of "breaking in" the plant will decline as its operations develop.

2) On reservations where absenteeism and turnover are problems, wage incentives can be designed to encourage employment stability. Employees who work steadily over a determined period of time could be awarded bonuses in cash or in kind (extra days of vacation). The induced stability might even pay for itself in reduced production costs. As in the direct labor subsidy the bonus subsidy program could phase out over a specific period after the demonstration period.

3) Subsidies can also be attached to individuals, not the job. This would allow Indians to have subsidized employment in industries off the reservation. The scope of the subsidy can be limited to specific job classifications or specific regions or can be broadened to include not only employment, but education. The subsidy would be in the form of a voucher which the industry (or college) would certify and submit for payment. The vouchers would be submitted each month or each quarter, and could be revoked by the administrator if, in his opinion, the subsidized activity did not meet the purposes of the program. It should be pointed out that the "individual" subsidy incorporates features from both the on-the-job training and employment assistance programs currently available, and goes much farther by greatly expanding the set of opportunities accessible to Indians.

4) It must be recognized that subsidies need not be in cash; thus may also be granted in kind. Many of the services that communities provide to industries are indirect subsidies and could be converted to cash subsidies for comparative purposes. It was pointed out above, that for many reservations the bottleneck on new industry is not the wage level but public infrastructure (including services) which private firms cannot afford to establish and maintain for themselves.

Human Skills and Motivation:

Entrepreneurial Skills:

This involves the recognition of new business and commercial opportunities and the willingness to invest in them, in addition to some managerial skills. In one respect, the actual and potential Indian entrepreneurs are in a favorable position since the reservations are closed to non-Indian entrepreneurs so that there is very little competition. There are few successful Indian entrepreneurs because Indians lack confidence in their own enterprises, and are generally unfamiliar with economic risk-taking and the recognition of economic opportunities. It is desirable to have a variety of programs at the school level which will stimulate the students to become involved in the economy of the reservation and encourage them to start small economic enterprises themselves. One such program would be the use of Local Economic Area Development Centers. (LEADC's)

Program Description

Local Economic Area Development Centers (LEADC's) would be established at all on-reservation or near-reservation BIA boarding schools. They would administer economic development loans to local Indian entrepreneurs, and be operated by local Indian adults trained at the school in economic development planning and budgeting. High school students from the boarding school would be used for some of the planning tasks, simultaneously saving funds, providing remunerative on-reservation employment, and educating new potential development staff. (Some high school social science and science courses could be put to work on current project planning.) The schools would gradually become a center of local area enterprise, resulting in an increased local population that would eventually replace the boarding with a larger day school and much increased adult community involvement in the school.

The advantage of the program is that the students get an opportunity to make economic decisions that give them a realistic feeling for the creation of new enterprises and how to seek out and analyse economic opportunities. Every opportunity should be seized which presents this kind of exposure. Another valuable program would offer instruction in printing at selected vocational and high schools:

Program Description:

Printing presses in selected voacation and high schools would permit students to compose, edit, and print a newspaper to serve both the community and the school. Part of the newspaper would be written by the students, while part would be written by tribal leaders and printed by the students. Small schools would receive compositor's sticks, type, and hand rolling presses. Larger schools would be equipped with larger printing presses and would print newspapers for smaller schools from copy sent to them. Newspapers would be distributed to the community without charge. Costs of the program could be partially met by selling advertising space to local businessmen.

This program directed toward overcoming student language difficulties, also provides excellent training in entrepreneurship. There is very considerable scope for the creation of such small student run business ventures as the student newspaper through instructional programs.

Along with such practical economic projects, a great deal can be accomplished through games and courses dealing with the economics of the reservation and areas which are similar to the reservation. For example:

Program Description:

Students will examine the economics of the desert in Jordan and in Israel, with emphasis on the development of the Negev. Students will examine the reasons for the region's development, the resources employed, and its overall cost-effectiveness. They will be encouraged to relate the Israeli effort to the potential resources of desert land on Indian reservations. Students might irrigate in a greenhouse a small plot of land to illustrate the possibilities of agricultural development. They might discuss ways of effecting this change, the resources needed, and the likelihood of its achievement. The course would be taught using a maximum of actual, experience and visual materials. A rough comparison of the yields per equal investment of agricultural and industrial development will be made.

Another course would deal with the problems of the economically non-self-sufficient populations.

Program Description:

This course would examine the ways in which the island republic of Anguillas has attempted to meet the problem of a lack of economic self-sufficiency. The solution of sending workers outside Anguilla to work, and the concommitant social and cultural problems, will be discussed. Students will be encouraged to relate the Anguillan problem to that of certain Indian populations. Role plays will be employed.

The social science curriculum programs will also provide the student with a perspective on economic problems and the motivations and behaviors. Such courses as described below would be relevant.

Problem:

Elementary level: new behavior patterns expected from unfamiliar authority figures of different culture; expression of emotions.

Program Description:

Elementary social studies will focus on a study of human behavior patterns, varying with age, situation and culture, the hierarchy of needs that motivate different behaviors, behavior dictated by roles, emotion associated with behavior, predicting behavior.

The three year primary course will emphasize self, parent-child relations, peer groups and community. At the kindergarten and first-grade level, the behavior and interactions of anthropomorphic animals will be studied through the use of myth and fables. (Particular attention will be paid to Indian myths.) Myths will be selected for presenting a diversity of behaviors and will be drawn from several cultures. Behaviors described will be appropriate to age level.

In each unit of study, picture stories, films, role playing, games and unfinished stories will be used. Students will give advice and predict behavior of "animals" and humans, based on knowledge of previous behavior of the characters on projecting their own feelings at a decision point, on the nature and role definitons within the group. Study of families of different cultures will be included. Pressures on individuals functioning in different cultures and in different groups (family vs. peer group) to conform to conflicting behavioral demands will be included:

Problem:

Exposure to Social Science Disciplines; Developing Analytical Skills; Analysis and Resolutions of Social Problems

Program Description:

The conceptual framework of the 7-12 grade social studies curriculum is human problem solving. Students will examine the ways different kinds of social, political, and economic problems are identified or make themselves known, how different kinds of problems happen; how to analyze problems, how to organize resources to resolve problems and how to predict and control the occurence of future problems. The approach will be both cross-cultural and historical.

The curriculum will use a wide range of media from printed materials, movies, games and simulations to the natural and human resources of the students' home community. Curriculum materials for each study unit will include printed background information, games and simulation exercises, guidelines for developing alternative student exercises, references to resource material not included in the curriculum package, and guidelines for using them.

In addition to these courses, students should be exposed as much as possible to economic institutions and successful entrepreneurs both on and off the reservation by means of field trips and talks, and films.

Management Skills:

There is a great deficiency of management skills for running tribal enterprises, individually owned Indian businesses and supervising skills needed to advance in non-Indian owned enterprises. As far as the latter is concerned, non-Indian enterprises should provide valuable training for the development of Indian management skills. The companies that are most likely and best suited to teach management skills to Indians are technologically progressive, large corporations which have already developed considerable skill in training persons for management skills. Modern corporations are probably the best source for management training. However, such firms must be first attracted to the reservations.

The various economic projects outlined in the section on entrepreneurial skill training will also give students actual experience in running their own small enterprises. In general, any improvements in basic language and mathematical skills will be useful to any manager.

Specific management training programs, conducted in the evening, would be useful to Indians owning small businesses. The course should emphasize practical business skills such as bookkeeping, keeping of proper records, and basic finance. No such instruction is now available on Indian reservations.

Education Implications:

Employers seek reliability, responsibility, job motivation, problem-solving initiative, language skill, and mechanical sophistication in Indian employees. (See Chapter III.) Insufficient data makes it difficult to compare Indian and non-Indian employees on the basis of the above criteria. However, it is clear that Indians would be more likely to gain employment and advancement, and companies would be more likely to participate in the economic development of the Indian reservations, if these qualities were strengthened in Indian employees.

There is no direct correlation between reliability and educational level; more schooling does not necessarily result in more reliability. This may also indicate that schools fail to teach reliability.

What can the schools do to strengthen the qualities desired by employers? The qualities fall into two general categories: personal traits and the cognitive skills. English language skills can be improved through remedial programs such as second-language instruction. Technological craft clubs and science classes in high school would promote mechanical skills.

Altering personal and cultural traits is far more difficult; adapting mores and cultural traditons sometimes takes generations. Absenteeism and passivity are quite normal responses to unfamiliar and apparently hostile industrial environments. A program could be instituted to educate Indians in the customs and expectations of employers. Since most industrial and commercial enterprises have similar 'company customs' (such as calling in when absent, minimizing latenesses and absences, and maximizing efficiency) these more or less standard requirements could be taught as part of the high school social studies curriculum under the heading of "The sociology of contemporary industry and commerce."

Another approach to the problemsof reliability and initiative might be to define these qualities in terms of etiquette. Many Indians are very considerate of whatever they regard the salient rules of etiquette to be. If it were made clear in high school courses that, to the average non-Indian, an appointment broken without warning or explanation constitutes an insult, then such 'rude' behavior might be carefully avoided. It could be pointed out that to the factory foreman counting on the appearance of his employees, the unexplained absence of a workman represents just such a "broken appointment."

A technique that has been successful in building employee empathy for management problems is reversed role playing. Hardcord unemployed trainees gain a realistic understanding of the costs and burdens of employee unreliability by simulating supervisory roles. This technique could be applied in high school social studies as part of a unit exploring contemporary industrial enterprises.

In summary, much can be done in the schools to increase the employability of the Indian labor force. Strengthened language arts and second language training, and instruction in applied science and technology are basic and clearly desirable. Social studies units dealing with the nature of typical enterprises and the roles and relationships of managers and employees could do much to promote reliability, responsibility and job initiative. The 'work ethic' could be presented in a value-free way as simply the customs of the corporations.

The type of industry which commonly locates on Indian reservations requires mostly manual skills, and academic achievement is of little importance. This does not indicate that increased education does not increase employability. It merely means that in these particular industries employability is dependent upon mostly non-academic qualifications. If educational levels were consistently higher, employers seeking more sophisticated skills would be attracted to the reservations, and this would enable Indians to compete in a much larger labor market (for skilled jobs) than the predominantly unskilled and steadily declining labor worker.

Finally, higher level management courses could be established for tribal leaders and Indians concerned with managing tribal enterprises. A course such as this, designed to deal with the problems of management on Indian reservations would be a useful innovation.

Labor Force Information

Each reservation should collect and maintain a complete file on individuals available for work. Improving labor information systems is not a new idea for area development, nor even for Indian reservations. Several reservations in New Mexico use studies carried out by the Smaller Communities Program (Concerted Services Pilot Project) of the Department of Labor. The study for Sandoval County, for example, contains data on a broad range of worker characteristics, including not only availability, but interest in training programs, past experience, transportation problems, and health.

In addition to maintaining a data file of available on-reservation workers, an off-reservation file should be kept on Indians who are willing and interested in returning if job opportunities became available. This would be particularly useful if off-reservation Indians have particular skills in high demand by the prospective industries.

Various techniques have been tried in distributing questionnaires for labor information systems. School children are often the best distribution channel for both on- and off- reservation residents (in the latter case, they are usually relatives or friends). It has also been shown that the value of the information does not diminish; data two and three years old still reflects the types and amounts of various categories of labor that can be tapped by new industry.

Social Overhead Capital

Since competition for industries is very intense among small communities in all areas of the country, reservations should be responsive to the needs of industry for social overhead capital: power, sewers, housing, and roads. Reservations should prepare site development projects, available for immediate implementation upon request.

This preparedness requires immediate funding so that a guaranteed reserve fund can be available to reservations for future planning. The types of social overhead capital qualifying for this program should include: roads,

sewers, water, actual site preparation (grading and paving of parking areas), and in some cases public housing, clinics and schools. Many of these services are presently conceived as subsidies to industry. The question is not whether to subsidize in this manner, but whether the benefits exceed the costs of the subsidy. Reservations must be provided the means to compete with other communities for industrial development.

The general programs discussed above (improved labor force informations, special training, a flexible program of infra-structure development and labor subsidies) constitute the nucleus of a package of inducements to industrial development on the reservations. In their most efficient form, all three programs would be administered by the Bureau's staff in Washington, where higher-level policy perspectives would be brought to bear upon such important matters as level of subsidy, and design and comparability of labor force information systems. Various mixes of these three programs could be offered to individual reservations as needs and conditions require.

Other components of a total package of inducements will be discussed below. These do not, in general, require central management, nor are all relevant to the needs of all reservations. They are, instead, demonstration projects, designed to enhance the development potential of specific reservations with particular problems and characteristics.

Transportation

One of the problems endemic to rural areas is the mobility of the area's population. Indians in remote sections of reservations cannot avail themselves of the goods and services in urban markets or employment opportunities because they are not easily accessible. Car ownership is a large financial burden, and rural road networks are often of very low quality and impassable in the winter. By making workers more mobile, the effective labor market is enlarged and provides a much greater incentive to new industry.

Another one of the shortcomings that severely limits the suitability

of reservations as sites for industrial location is poor transportation service to the main market areas of the country. High costs of transportation are not always the most serious problem.

One approach to overcoming the transportation problem, especially for reservations like Pine Ridge, that are located near major East-West trucking routes, would be a program for packaging reservation products and providing short-haul transportation to terminals on the major routes. For example, Main truck routes pass through the Navajo reservation, and development plans call for creation of modern terminals on these routes to enable on-reservation producers to take advantage of improved land transportation service.

A variety of demonstration projects could be tried for rural areas:

1) Better use could be made of existing school buses. During off-peak hours, these buses could run on a Demand Activated Response System (DART), providing service to consumers making farm to city trips.

2) A variation of the Swiss postal bus system might be tried on reservations. Post office vehicles circulate widely in rural areas and could pick up and deposit passengers at pre-arranged or convenient stops. The routes or timing are not likely to be as flexible as in the case of the DART system, but the costs should be much lower.

3) Car pools could be subsidized to encourage owners to make efficient use of their vehicles. Improved information systems or pre-arranged pick-up and drop-off sites are ways in which a car pooling system might be planned.

The major cost of transportation for reservations lies in: (1) an additional stop for trucks (even if there is no detour); (2) loading time, (3) scheduling a long haul to pick up products along the way. Small, easily handled containers would solve these problems in the following manner because short-haul transportation could carry products to a major truck route, where services are available and truckers could schedule a stop. This would avoid making special stops or a detour. Packaging of break-bulk products would reduce loading time to a minimum, and make it possible to store non-perishable products at the terminal

until a truck with space available could be scheduled to pick them up. Since there is often empty space (frequently but irregularly) on portions of cross-country hauls, trucking concerns would gain as well from making non-scheduled pickups as locations on their routes.

Technical and operational aspects of such a demonstration project would require careful planning based upon specific local conditions. Demonstrations of ;this nature would be especially suitable for the Navajo and Pine Ridge Reservations.

Systematized Part-Time Work

One cause of high turnover and absenteeism rates is the frequent Indian preference for intermittent work. Although Indians are capable of intense and effective work under certain circumstances, they adapt with difficulty to the pattern of work and leisure found in modern industry. One characteristic often observed is a preference for short periods of intense work followed by leisure periods longer than the two-day weekend.

Rather than attempting to alter the Indian's habits, employers could modify their production schedules and shift policies to accomodate a time pattern that is more compatible to the Indian way of life; perhaps a compromise could be attempted. Several demonstration projects supply the information from which the effectiveness of various schemes could be determined. For example, schedules providing one week on and one week off (in effect, half-time work), or two weekly shifts of three 10-hour days (three-quarter time), could be experimented with.

Employers could be provided the following assistance in these programs:

a) Technical assistance in designing a new scheduling of shifts.
b) Subsidization of additional costs incurred in hiring, training and supervising additional workers.

Industries that can operate on a seasonal basis or on a cottage industry basis (eg. construction or home handicrafts) should be encouraged to locate on those reservations where there is a very strong preference for intermittent work. What must be recognized is that the transition from a

way of life based on subsistence agriculture to that based on an eight-hour day of the factory system is too difficult for some Indians, and that preferences and cultural patterns should be accomodated by industries which desire most efficient operation.

Housing

The principal finds of Abt Associates' analysis of housing indicate that housing plays a crucial role in the industrial development of some reservations, particularly those with low population density. The interdependence of housing and economic development is not recognized or fully appreciated. Steps should be taken to insure that housing is constructed in anticipation of future industrial location. The analysis also illustrated administrative, financial and technological constraints on housing. A few proposed program outlines are given below.

A. Rationalization of Housing Planning and Control

The numerous agencies now involved in the provision of Indian housing should coordinate their planning and their funding programs and policies. Such a rationalization would avoid uneconomical duplication of activities.

B. Development of Managerial Talent

The BIA should sponsor leadership training programs in housing on various Indian reservations, and provide increased pay incentives for qualified managerial personnel. Talented individuals should be encouraged to remain on the reservations instead of relocating in other areas.

C. Construction of a Model Home

This would serve as a means to demonstrate the design of the prospective housing, and would allow planners to determine needs and desires of Indian workers. The cost and preference alternatives should be clearly presented, and the potential users should be given a chance to choose among them.

D. Tribal Construction and Development Corporations

Where resources and size of the reservation permit, construction and development corporations should be set up to maximize efficiency and allow user participation in the design and production process. This strategy might also serve to promote pride in new housing construction. Corporations could handle financing and construction contracts, giving full consideration to low-cost housing constraints, the provision of social services and the recruitment and education of indigenous talent for managerial positions. Rehabilitation or construction contracts, awarded through these corporations, would allow cost-effective allocation of manpower, assisting the development of the reservation and increasing its residents' technical skills. In the long run, such corporations would allow the reservation's inhabitants a maximum of participation in, and control of, low-cost housing, from its preliminary design to final management.

Film Two: Alternatives For American Indian Education

This film, sequel to Problems of American Indian Education, is intended to aquaint teaching staff and school administrators with some of the educational programs recommended by Abt Associates. It is not an instructional film, or a training device; it strives to familiarize teachers with those programs which are most indicative of forthcoming trends in teaching technique and curriculum design, and provides an audio-visual forecast of new directions in administrative policy. The thematic emphasis of the film is on changes teachers themselves can make now, without any additional equipment or hardware, such as more positive relation of curricula content to the natural environment of the student. From practical suggestions relating to teaching technique, the forecast section considers the possibility of ship-board mobile schools, and community-oriented dormitories.

The film makes use of footage shot on location as well as studio production and graphics. It relates programs to problems shown in the previous film, but in a general sense, since a one-to-one program-problem ratio would greatly restrict the visual format of the film. The film emphasizes the necessity of adapting curriculum materials to teaching techniques which will interest and involve students. Some of the techniques presented are peer teaching, learning teams and educational games.